

# **Bicycle Commuting in Oslo**

*Practices, Constraints, and new Directions for Policy*

**Liv Jorun Andenes**



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*Centre for Development and the Environment*

*University of Oslo*

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*“21<sup>st</sup> century cities won’t work without cycling”*

(Philippe Crist, the International Transport Forum, cited in Marhold 2013)

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## Abstract

In this thesis, I examine the main constraints to the propagation of bicycle commuting in Oslo. Furthermore, recommendations for the promotion of bicycle commuting in Oslo through policymaking are made. Data has been collected by qualitative research methods, including in-depth interviews with 20 commuters in Oslo about their commuting routines. The questions guiding the empirical research process were: What are the main constraints to bicycle commuting in Oslo, and how can policies promote the practice? Why do people commute the way they do? In what ways does the historical trajectory of commuting practices in Oslo shape bicycle commuting today? Findings were analysed in the perspective of social practice theory.

Throughout the analysis I demonstrate that people commute in ways that fit into their daily schedules in relation to time, space, convenience, comfort, safety and health. Commuting routines are outcomes of an ongoing process of negotiation with external structures of society, transport systems, geographical and contextual features, material objects and infrastructure, cultural meanings, social expectations, and people's embodied predispositions, including notions of comfort and convenience, competence and knowledge.

I found the biggest constraints to bicycle commuting in Oslo today to be its cultural associations with danger, fitness and sports. These associations were largely interconnected with deficient bikeway infrastructure and the cohort of people bicycle commuting today. To increase levels of bicycle commuting, the practice needs to be disconnected from danger and sports/exercise, and (re)connected with meanings of convenience, comfort, safety and ultimately *normality*. At this stage, building and maintaining safe and consistent bikeways is the most crucial policy intervention. Hard policy measures, such as building bikeway infrastructure, should be supplemented by softer policy measures aimed at altering the meanings connected to the practice.

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Liv Jorun Andenes

Oslo, December 2014



## Introduction

After decades of stagnation, cycling levels have started to grow rapidly in various cities across the globe. Cycling is increasingly being regarded as an imperative mode of transport for the sustainable cities of tomorrow, and many North American, Australasian and European countries, including Norway, have officially recognised the importance of cycling as a mode of urban transportation (Buehler and Pucher 2012, 1). The motives behind this apparent cycling renaissance are many. First of all, cycling causes no air pollution and little noise, and consumes far fewer non-renewable resources than motorised modes of transport (Buehler and Pucher 2012, 1). Air pollution is both a local and a global concern, and most countries have official goals for reducing the emissions of greenhouse gases and other air pollutants. Second, lack of space is a source of conflict in many urban areas. Bicycles occupy only a fraction of space compared to cars, and cycling alleviates roadway congestion and reduces the need for parking space within cities (Liva, Brechan, and Hjorthol 2011). Third, cycling is cheaper than driving a car or using public transportation, and it lowers the demands for public infrastructure investments. Fourth, cycling contributes to physical activity, thereby increasing individual life quality, preventing lifestyle diseases and reducing public health care costs. Fifth, because of its accessibility and affordability, the bicycle is a democratic and socially equitable mode of transport (Buehler and Pucher 2012). Finding effective ways to promote cycling is therefore an important part of the solutions to both global and local challenges. The Norwegian government's national transport plan and its climate policy strategy both insist that in order to avoid massive roadway congestion and rising levels of greenhouse gas emissions, a modal share increase of public transport, walking and cycling is the only sustainable solution to the future growth of human mobility in urban areas (Samferdselsdepartement 2012-2013, Miljøverndepartement 2011-2012).

## Rationale

Oslo is by far Norway's largest city, with more than 600 000 inhabitants. It is also the fastest growing city, expected to inhabit more than 830 000 people by 2030 (Oslo kommune 2012) . Despite high public transport and pedestrian modal shares, more than 50 percent of greenhouse gas emissions in Oslo come from motorised transport (Oslo kommune 2012). Roadway congestion and dangerous air pollution, especially during rush hour and in winter, are already serious problems. Car restrictions, such as environmental speed limits and a studded tire fee, have been implemented without providing the results required to meet the legal standards of air quality. In 2013, the Surveillance Authority EFTA threatened to file a lawsuit against the state of Norway for violating EU regulation of air quality in the country's largest cities (Gunnlaugsson 2013). In addition to pollution problems, seven out of ten Norwegians have a lower level of physical activity than the official recommendations (Hansen, Kollé, and Anderssen 2014). Higher levels of active commuting among the citizens can therefore alleviate several of the challenges facing Oslo and its population, including the need for urban densification.

Last measured in October/November 2013, the bicycle modal share in Oslo was 8 percent. Oslo lags behind the capitals of the neighbouring countries Sweden and Denmark, and also Norwegian cities such as Trondheim and Kristiansand (Lea, Haug, and Selvig 2012, Løken 2011, Bugge 2013, Kummel and Nordström 2013b). The goal of a 12 percent bicycle modal share within the year 2015, set by the City Council of Oslo in 2005 and maintained in 2010, has not been reached. The municipal Agency for Bicycling has recently made a proposal for a new bicycle strategy for the decade to come, suggesting a goal of a 16 percent bicycle share within 2025. The City Government's Department of Environmental Affairs and Transportation is currently preparing the proposal for political proceedings in the City Council (Kummel and

Nordström 2014b, Oslo kommune 2004, 2010, Kummel and Nordström 2013b).

There are many indications of a large potential to increase cycling levels in Oslo. First of all, Oslo residents have a positive view on cycling as a mode of transport, and 19 out of 20 residents support the municipality's goal to increase the bicycle modal share (Kummel and Nordström 2013a). Secondly, seven out of ten inhabitants live less than 30 minutes of cycling away from the city centre (Ulle 2014b). Thirdly, more than half of all car trips in the city are shorter than five kilometres – a distance range with a large potential for replacing car driving with cycling (Kummel and Nordström 2013a). A comparative study of various cities concludes that it is possible to increase the bicycle modal share in Oslo to somewhere between 10 and 20 percent (Lea, Haug, and Selvig 2012).

Personal mobility with the purpose of getting to and from work make up a considerable share of people's daily mobility needs (Liva, Brechan, and Hjorthol 2011, 36). Much of the road traffic challenges in Oslo, and in other cities for that matter, occur during rush hour, such as traffic congestions, high levels of local air pollution, peak demand for public transport etc. Despite these challenges, commuting practices has so far received relatively little academic attention. A part reason for this is said to be its mundane, taken-for-granted, and almost invisible, nature (O'Dell 2009, Shove 2003). Cycling is not the only environmentally friendly and health promoting mode of transport. However, cycling has a major advantage compared to walking: Its large distance range, and its ability to compete with motorised transportation in time-use on distances up to a multiple number of kilometres, especially in compact cities. The rush hour challenges in Oslo and the benefits and competitiveness of cycling, along with the slow propagation of the practice in Oslo, is the main rationale for making bicycle commuting the research topic

for my Master's thesis. Although we already know much about the practitioners of bicycle commuting and other transport practices in Oslo from quantitative studies by research institutes such as The Institute of Transport Economics (TØI), The Foundation for Industrial and Technical Research (SINTEF), Spacescape, and The Norwegian Public Roads Administration (NPRA), there are few studies digging deeper into the different mobility practices themselves; the connections between them, the constraints to performing them, the recruitment and defection of practitioners, to mention a few aspects. Employing qualitative research methods and a theoretical framework of social practices gives a much needed, in-depth understanding of the constraints to bicycle commuting in Oslo – an understanding that is useful for policymakers aiming at increasing the levels of cycling, and especially bicycle commuting, in the city. More qualitative research should be made in order to gather further evidence of the complex relations between elements and practices influencing bicycle commuting in Oslo.

## Personal motivation

I grew up in a rural town in Norway where mobility needs are generally covered by motorised transport modes. During my adolescent years, I considered the bicycle to be a tool for exercise and leisure, not a convenient mode of transport. My personal perception changed during a one year stay in Copenhagen, a city with high levels of cycling. I soon realized how ideal the bicycle was for getting around the city. In most cases, cycling was faster, cheaper and more pleasant than any other mode of transport, and it provided me with freedom. Besides, everyone else did it, including my friends, which made it all the more convenient. When I moved to Oslo I continued cycling, and found it hard to understand why most people in Oslo prefer covering their mobility needs with other modes of transport, especially since stacks of scientific research identify an incredible amount of benefits of cycling. I was

also curious about the differences in cycling practices between Oslo and Copenhagen. I found them to be not just about visible issues, such as infrastructure and topography, but also about cultural differences, people's preferences, knowledge and ideas. Personally, I experienced becoming committed to cycling through performance. If I can change my everyday routines, others can too. This became the starting point for studying bicycle commuting practices in Oslo.

## Research questions

The aim of the study is to examine the reasons for the relatively low bicycle modal share for commuting in Oslo, and to shed light on the possibilities policymakers have to increase the levels of cycling. The main research question is:

*What are the main constraints to bicycle commuting in Oslo, and how can policies promote the practice?*

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Detecting the constraints to bicycle commuting in Oslo, and the ways in which they affect each other, reveal potential challenges and possibilities for promoting the practice through policymaking. An important step in the process of identifying these constraints is gaining insights into why people commute the way they do. Social practices, and the elements they are made of, have been subjected to change and persistence through time, which is why an account of the historical development of commuting practices in Oslo provides further understanding of their contemporary position in the city. The following sub-questions have guided the research process:

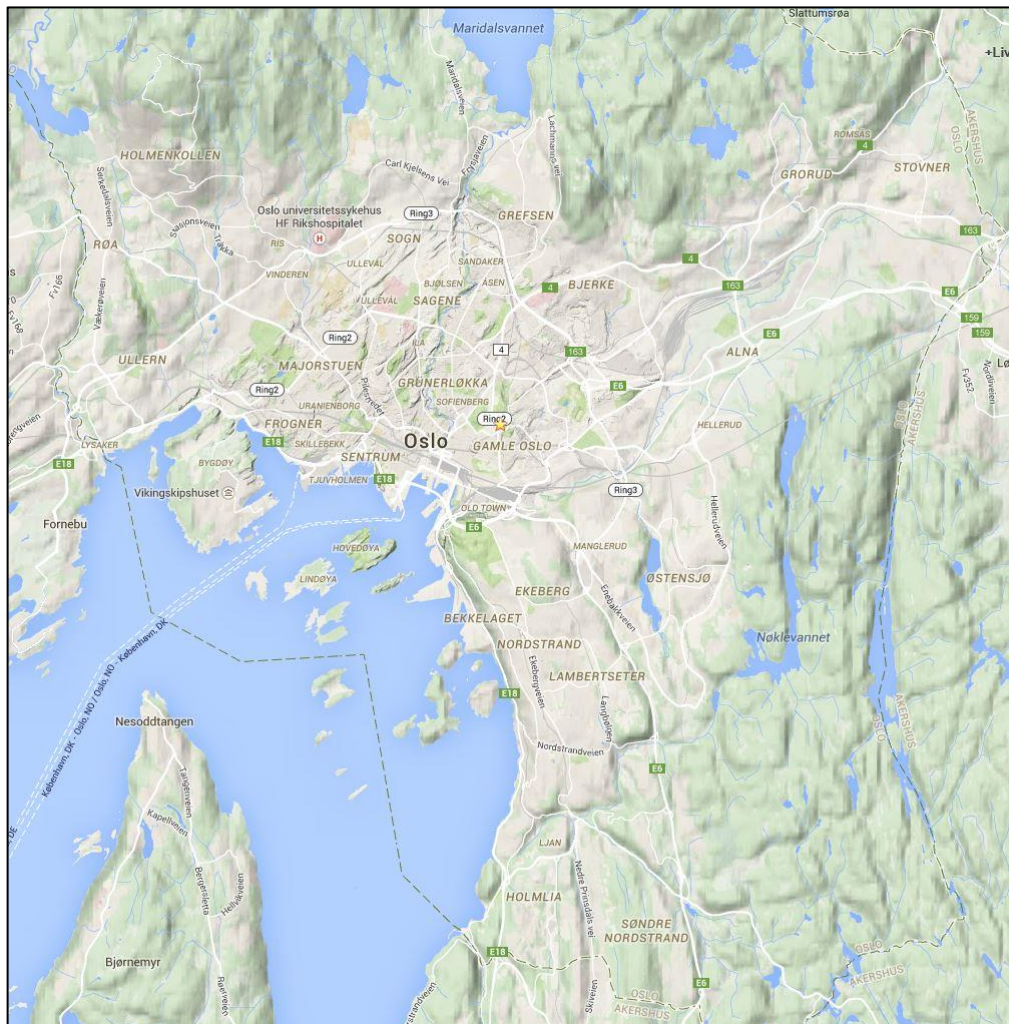
- *Why do people commute the way they do?*
- *In what ways does the historical trajectory of commuting practices in Oslo shape bicycle commuting today?*

## Reader's guide

The thesis report is made up of ten main chapters. The first chapter, *Introduction*, is divided into five sections, where I account for the rationale for the choice of topic and research methods, describe the research questions, provide a reader's guide (which you are currently reading), and present a brief description of Oslo with its past and present commuting practices. The second chapter, *Commuting in a social practice perspective*, introduces and describes the theoretical framework employed in the research project. Here, I elucidate the benefits of using social practice theory to study bicycle commuting, how bicycle commuting can be regarded as a practice, and the relevance of incorporating other practices in order to understand the social position of bicycle commuting. In the third chapter, *Research methods*, I describe and justify the study's research design and methodological approach. I also account for the collection of data, methodological challenges and ethical reflections. The next three chapters contain the main findings, discussion and analysis: In *Why people commute the way they do* I examine the agentic forces behind people's commuting practices. In the next chapter, *Constraints to bicycle commuting in Oslo* I answer the first part of the main research question based on the findings made in the previous chapter. *Promoting bicycle commuting through policymaking* builds on the two first analysis chapters. Here, I suggest new directions for the promotion of bicycle commuting through policy, thereby answering the second part of the main research question. The research question regarding the historical influence on the contemporary situation for bicycle commuting is answered in bits and parts throughout the three analysis chapters. The last four chapters contain the conclusion of the thesis, a few remarks on the scope and limitations of the study, the bibliography and appendices.

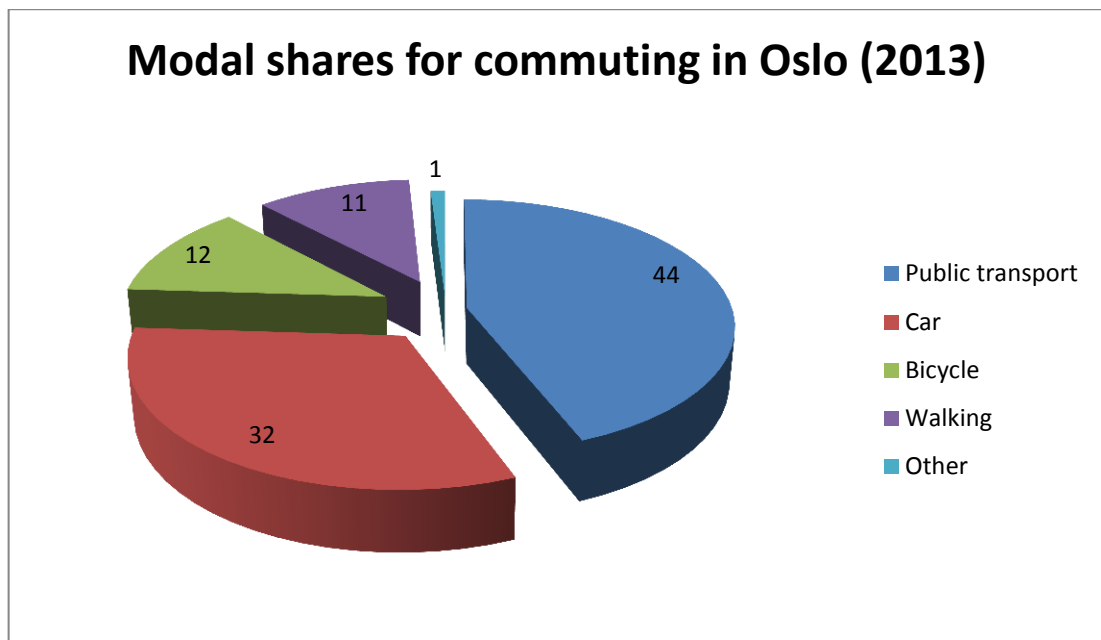
## Oslo and its commuting practices

In order to establish common ground, and to give readers who are unfamiliar with the city of Oslo and the topic at hand an understanding of the contextual setting of the study, I use the first few pages on a handful of relevant facts about Oslo. This includes information about the city's geography, transport infrastructure and modal shares, and a brief historical account of cycling and personal mobility practices in the city. As will be elaborated on later, the contextual setting and historical trajectories of social practices are highly significant for their present position in society. Issues such as city structure, topography and climate are especially relevant to commuting practices.



*Figure 1: Map of the municipality of Oslo (Google Maps 2014).*

The municipality of Oslo is situated in the south-eastern part of Norway by the Oslofjord. In a Norwegian context, Oslo is a relatively compact city, with the majority of its population residing and working within ten kilometres of the city centre. The centre area and the seaside are surrounded by more or less elevated ground (see Figure 1). Although the highest point in the municipality is 630 meters above sea level, most people live in areas elevated by less than 150 meters (Topographic Map 2014, Ulle 2014a, Kartverket 2014). Oslo has a temperate climate, with a mean year temperature of 6 degrees Celsius, ranging from 17 in July to -4 in January (Norwegian Metereological Institute 2014).



*Figure 2: Modal share for commuting in the municipality of Oslo (Kummel and Nordström 2013b).*

The modal share for commuting in Oslo is 44 percent by public transport, 32 percent by car, 12 percent by bicycle, 11 percent by feet and 1 percent by other modes of transport (see Figure 2). The average travel length on a



weekday across all modes of transport is about 6.5 kilometres, while the average length of a bicycle trip is around 4 kilometres.

The overall travel market share of cycling in Oslo on a weekday was 8 percent in October/November 2013, but there are vast differences in the bicycle modal share throughout the year and between the different city districts. In district Alna, the bicycle has a modal share of only 1 percent, compared to 15 percent in district Grünerløkka, and while only 6 percent of the population cycle regularly during winter, this share grows to two thirds of the population during the summer season (Kummel and Nordström 2013b). The average income and education level among bicycle commuters is higher than the overall average in Oslo; six out of ten bicycle trips are performed by men; the age group 30-44 is highly overrepresented, while younger and older people are underrepresented (Kirkeberg and Epland 2007, Statistisk Sentralbyrå 2012, 2013a, Tretvik 2011).

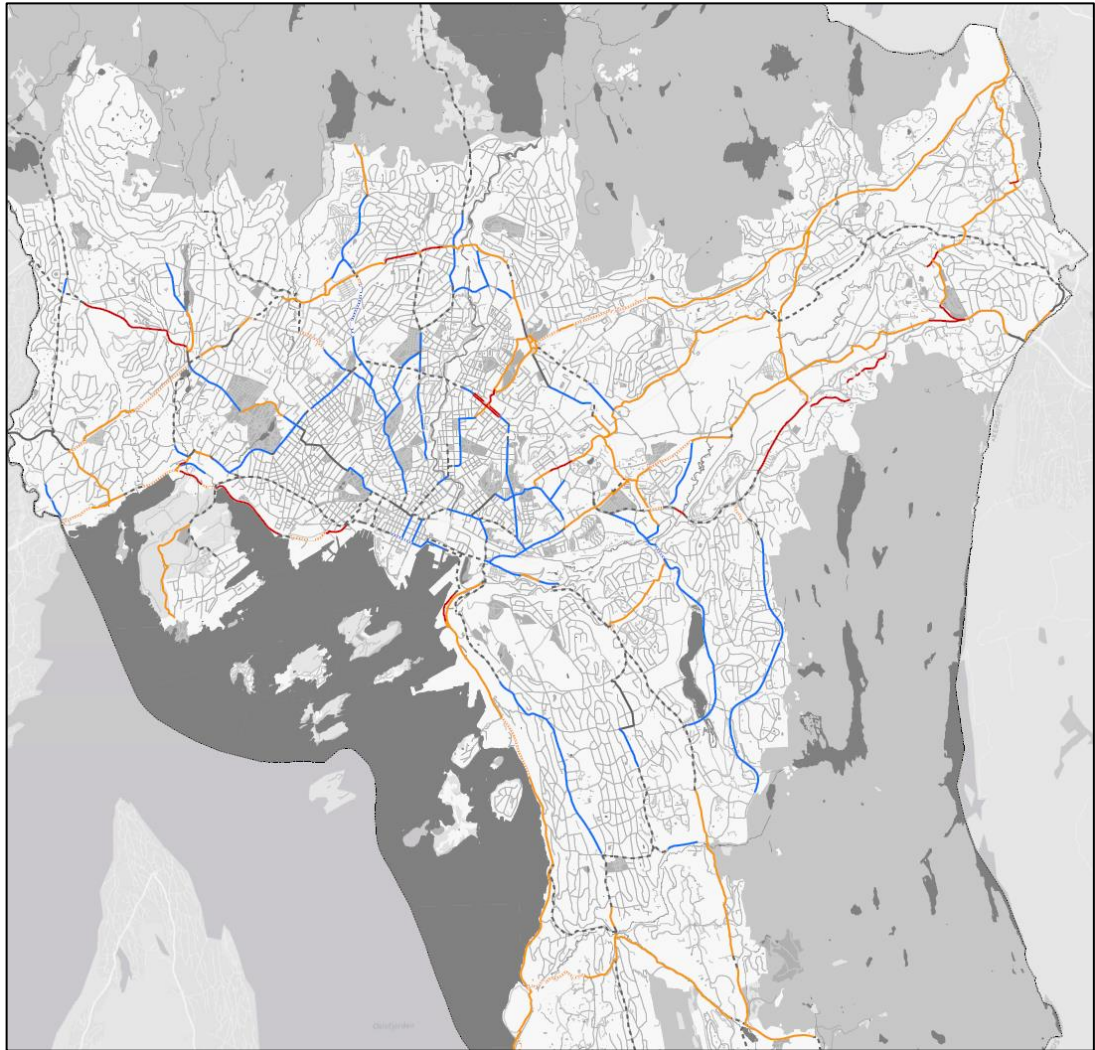
Within the municipal borders of Oslo there are more than 1 300 kilometres of public roads (Kostra 2013). The length of the dedicated bikeway infrastructure is currently about 190 kilometres, out of which the majority consists of lanes on the edges of roads, separated from motorised traffic with white, dotted markings. Another major portion of the bikeway infrastructure is physically separated paths shared by both pedestrians and cyclists<sup>1</sup>. Only parts of a few routes in the city offer cyclists a dedicated area, physically separated from all other types of traffic (see Figure 3) (Ruud 2014).

Bicycle and car ownership in Oslo is widespread. In 2013, 76 percent of households had access to one or more bicycles, and 68 percent had access to one or more cars (Kummel and Nordström 2013b, 42). Since 2002, Oslo has had a bicycle sharing scheme, “Oslo Bysykkkel”, which today consists of about

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<sup>1</sup> In Norwegian: “Gang- og sykkelvei”.

1 350 bicycles and 110 racks placed in and around the city centre. In 2012, the scheme had about 50 000 subscribers, and in 2015 it is to be extended to consist of at least 3 000 bicycles and 350 racks with a geographically wider spread (Oslo kommune 2011, Tronstad 2012).



*Figure 3: Bikeway infrastructure in Oslo (2014). The blue lines represent bicycle lanes, the yellow lines pedestrian/cyclist paths, the red lines separated bicycle tracks next to a sidewalk, and the grey lines cycling in mixed traffic. The dotted lines represent the parts of the politically enacted bikeway network that has not yet been built (Ruud 2014).*

## *A historic glance*

The first bicycles came to Oslo in the 1860s in the shape of high-wheeled velocipedes. Inspired by the leading European cycling nation at the time, England, cycling was at first regarded to be a gentleman's club sport with codes for proper dressing and conduct. Kristiania<sup>2</sup> Velociped-Klub was founded in 1882, and its members went on excursions wearing army-looking uniforms (Rabben 2014a). Because of the risk of tipping, the high-wheeled bicycle users have been described as “men of means and nerve”, a term I later in the thesis will argue is quite fitting to describe the group of people who bicycle commute in Oslo today (Bijker 1995, 98). Technological innovations were one of the reasons why the use of bicycles changed only a few years later. By the end of the century the so-called ‘safety bicycle’ replaced the velocipede. These bicycles looked much like today's bicycles, with equal-sized wheels, back wheel chain drive and pneumatic tyres, which made them easier and more comfortable to manoeuvre than their predecessors. Cycling soon became a popular individual mode of transport, and not just a gentleman's sport and leisure activity. This development was not welcomed by everyone, and in 1895 the sport's magazine *Norsk Idrætsblad*<sup>3</sup> complained about the lack of proper conduct and education among the new groups of cyclists: “Not long ago, cycling was a noble sport (...) the situation is completely disturbed! (...) Nowadays you see all kinds of people handle the machine, all the way down to bell boys!”<sup>4</sup> (Rabben 2014b). Because they were cheaper and easier to manoeuvre in the narrow city streets than horse wagons, bicycles soon replaced much of the city transport of goods. Around 1900, worker's wages started to rise while the price on bicycles remained stable,

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<sup>2</sup> Between 1877 and 1925 the city of Oslo went by the name Kristiania.

<sup>3</sup> In English: “Norwegian Sports Magazine”.

<sup>4</sup> My own translation.

which made bicycle ownership common among the working population. (Nielsen 2010, 6). After the Second World War, the biggest challenge for bicycle producers was to meet the increasing demand for bicycles in the Norwegian market. It wasn't just the mass production and technological development of bicycles that allowed them to become a common mode of transport; smooth and well laid out road networks were also an important condition (Parkin 2012, 3).

The historical development of utility cycling must be seen in relation to the trajectory of other personal modes of transport (Watson 2012). The city of Oslo has had public transport systems since the days of horse and carriage. In 1894, the city established Scandinavia's first electronic tram line. This was the beginning of an extensive rollout of a public transport system in Oslo, consisting of trams, buses, tubes and ferries, in addition to the local and regional trains (Ruter 2012). The car was introduced to the Norwegian market in the late 1800s, but remained out of ordinary people's reach until the 1960s (Monsrud 2001). By then, people had already experienced a revolution in individual mobility with the mass ownership of bicycles (Nielsen 2010). Unfortunately, there is little empirical evidence showing the development of bicycle commuting in Norway and Oslo before 1984/1985, when TØI began performing systematic travel surveys. Nevertheless, photos, newspaper articles and historical accounts show that the bicycle was a much more common mode of transportation of both people and goods in Oslo in the mid-decades of the 20<sup>th</sup> century than it is today (Røsåsen 2014).

Like in most other cities in northern Europe, utility cycling in Oslo diminished during the second half of the 20<sup>th</sup> century. The car became the new democratic mode of transport, thereby pushing cyclists off the streets. Many European countries saw a peak in the growth of cycling around 1940, with a massive decline starting after the Second World War and ending around 1975, when it

stabilised or increased slightly (de la Bruheze 2000, Watson 2012). The slow propagation of cars in the Norwegian society before the 1960s, which was a result of a restrictive car policy and a lack of domestic car industry, probably caused a delay in the decline of cycling in Norway compared to other European countries (de la Bruheze, 2000; Monsrud, 2001). In 1977, about 1000 people took part in a demonstration in Oslo against the car dominance on the city streets, which left the cyclists with little space. “Against cars we fight – from Kirkenes to Moss”<sup>5</sup>, they sang (Løken 2014a). The first policy plan to build a network of bikeways in the city was adopted the same year, but economic funding did not follow. In 2014, about 48 kilometres of the enacted network of 180 kilometres was still not completed (Løken 2014a). Between 1985 and 2009, the bicycle modal share in Norway went down from 6.2 to 4.2 percent, and public transport surpassed the car as the most common transport mode for commuting in Oslo (Hjorthol 2012).

Throughout this subchapter, I have presented a handful of evidence that the bicycle was a widespread mode of transport in Oslo during the first half of the 20<sup>th</sup> century, before disappearing more or less completely from the city streets during the second half of the 1900s, when cars and public transport gained ground as personal modes of transport. The city’s present network of bikeways covers only a fraction of the public roads in the municipality, and consists mainly of ‘shared-space’ solutions for cyclists and pedestrians, or for cyclists and motorised transport modes. Despite high household access to bicycles, and political goals to increase the modal share of cycling, levels remain relatively low. The significance of the historical trajectories of cycling and other commuting practices for the findings in this study is described later on. In the next chapter, I present the theoretical framework of the study.

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<sup>5</sup> My own translation. In Norwegian: “Mot biler vi slåss – Fra Kirkenes til Moss”.

## Commuting in a social practice perspective

The main mission for social sciences is to seek explanations for the workings of the social world, a task that boils down to identifying the drivers of human behaviour. There are many ways of interpreting empirical data collected in a social science study. Analysing them through a theory lens adds depth and insight by providing complex and comprehensive conceptual understandings of social workings that are otherwise difficult to grasp (Reeves et al. 2008). In this chapter, I argue the usefulness of employing concepts derived from social practice theory for examining commuting practices.

Social science theories are not in accordance when it comes to where the drivers of human actions, often referred to as agency or ‘agentive forces’, are located. The gap between theories of social determinism, where individual agency is regarded as almost non-existing, and theories of individual behaviourism, where the opposite is the case, has proven difficult to bridge (Reihle, Klaas-Wissing, and Ringberg 2007, 50). To the extent that empirical research on passenger transport employs theoretical frameworks, most of them come from the fields of economics and psychology. Attitude theories from social psychology, such as the Theory of Planned Behaviour (Ajzen 1991), the Theory of Interpersonal Behaviour (Triandis 1977) and the Norm-Activation Model (Schwartz 1977) have grown in popularity in transport-related research during the last decade (Schwanen, Banister, and Anable 2012, 523).

According to social practice theory, the development of practices is the source of both persistence and change in the social world. Studying them is therefore regarded as the key to locating the drivers of human action (Shove, Pantzar, and Watson 2012, 2). Making practices instead of human beings the central unit of social analysis, social practice theory overcomes the antagonistic relationship between deterministic and behaviouristic theories. Humans and

structures come together as a unity, a duality, in practices (Giddens 1984). Throughout the thesis, individuals performing practices are therefore referred to as *carriers* or *practitioners* of practices.

A social practice can be understood as “a routinized type of behaviour which consists of several elements, interconnected to one other” (Reckwitz 2002, 249). The elements making up a practice range from material infrastructure and objects, including the human body, to background knowledge, skills, feelings, values and symbols, which can be lumped together into the three groupings ‘materials’, ‘competences’ and ‘meanings’ (Reckwitz 2002, 249, Shove, Pantzar, and Watson 2012). For a certain practice to take place the necessary elements need to co-exist, and links between them has to be made (Shove, Pantzar, and Watson 2012, 45). Agency is therefore distributed between a range of sources and sites (Wilhite 2012). The elements of a practice are never static, and with the arrival of new elements, other practices, or changes in the pattern of participation, meanings, materials and competences can move, mutate or switch places (Shove et al., 2012, p. 62).

A social practice exists both as an abstract entity, a configuration taking place each time the practice is performed, and as unique performances (Shove, Pantzar, and Watson 2012, 7). The entity is sustained through successive performances, and a stable practice relies on faithful and continuous reproductions. The potential for changes lies also in the performances, these “moments of doing, when the elements of a practice come together”, where change can be initiated by the carrier through improvised reconfigurations of ‘old’ elements or by incorporating ‘new’ ones (Shove, Pantzar, and Watson 2012, 13). Elements also have the capacity to reconfigure each other, and sometimes a practice changes to the extent of becoming a whole new practice (Shove, Pantzar, and Watson 2012, 13).

The theoretical framework developed by Elizabeth Shove, Mika Pantzar & Matt Watson in *The dynamics of social practice: everyday life and how it changes* (2012), place a stronger emphasis on materiality than earlier works on social practice, supporting Bruno Latour's view of artefacts as "in large part the stuff out of which socialness is made" (2000, 113). Commuting practices relies on a massive range of material objects and infrastructures, in addition to socio-cultural meanings, embodied competences and contextual elements such as geography, topography, climate and weather. Studying bicycle commuting through a social practice lens provides the opportunity to illuminate the different elements the practice is made up of, and how they converge and affect each other (Watson 2012, 493). Bicycle commuting as a practice cannot be studied in isolation. As the introductory chapter shows, the histories of cycling, car driving and the use of public transportation are intimately connected. Commuting practices are also bundled together with many other practices, such as those of work, leisure, shopping, and exercising. Social practice theory provides a useful framework for mapping out the co-existence, co-location, cooperation and competition between different practices, and examine their interrelation (Watson 2012, 493).

## Bicycle commuting as a practice

Although it seems easy enough to separate a bicycle commute from other types of commutes, such as car or train commutes, one single commute might consist of several modes of transport: A bicycle to get to the metro station from home, a metro to get to the train station, a train to get to the train station closest to work, and finally a short walk. Because an individual can perform various types of commuting practices during a single day, or switch between different commuting practices during a year, it doesn't make much sense to talk about people as being either bicycle commuters or car commuters. By sticking to the practice instead of the individuals, the problem is avoided all



together. Bicycle commuting does not refer to a commute or to a person; it refers to the performance of a practice. Before digging deeper into bicycle commuting in Oslo as a practice, it is important to clarify how it can be regarded as a practice in itself, and not just the outcome of other practices. It is also necessary to defend the separation of bicycle commuting from other types of cycling and commuting practices, and the lumping together of different forms of bicycle commuting into one single practice entity.

The term ‘commute’ means “to travel some distance regularly between one’s home and one’s place of work” (The American Heritage Dictionary of the English Language 2003). One way of looking at commuting, and mobility in general, are as outcomes of other practices, such as work and leisure. This approach would highlight how different practices create demands for mobility of things and people (Hui 2012). The enquiry of this study is not to expose how demands for mobility arise, but to identify the constraints to meeting a demand already in place. Addressing bicycle commuting as a practice in itself, and not the outcome of other practices, provides a more focused approach to the task at hand.

The next step is to separate bicycle commuting from other types of practices involving cycling. The definition of the term ‘commute’ apparently excludes cycling for other purposes, such as leisure, visiting friends, or shopping. However, many practices are so closely integrated that they are difficult to separate. Some people do their shopping on the way home from work, and many parents with small children make kindergarten drop-off and pick-up a part of their daily commute. If the weather is nice, one might stop to buy an ice cream or take a detour through a park or a scenic landscape on the way home from work, filling the commute with typical elements of leisure. In addition, people ride different types of bicycles, wear distinct clothes and make use of various kinds of gear depending on the purpose of their commute.

Put simply: There are as many ways of ‘doing’ bicycle commuting as there are practitioners. This might make it tempting to defy the usefulness of studying bicycle commuting in Oslo as a practice entity. But, despite the diverse performances, people cycling to work in Oslo perform an activity with enough common elements of materials, competences and meanings, what Reckwitz (2002, 250) refers to as a ‘block’ of interconnected elements, to be treated as a practice. They all use objects identified as bicycles, they all share some of the same basic cycling skills along with a motivation of transporting themselves to work and back home again. The incorporation of activities such as shopping or kindergarten delivery is merely a bundling together of different practices and elements, a subject returned to in the chapter *Why people commute the way they do*.

Having established bicycle commuting as a practice, the elements can be identified. The bicycle with all its separate parts, safety gear and clothes, the roadway system, other traffic, the city design, and features of the human body are some of the material elements. The human body is both constitutive for and constituted through social practices (Wilhite and Wallenborn 2014). In addition to flesh and bones, it contains embodied knowledge, competence and experience, vital elements of social practices. The human body is an important element in the performance of cycling practices, being the navigator, the engine and the passenger at the same time. Competences include various forms of understanding and practical knowledge. To bicycle commuting, this involves an understanding of the bicycle as a mode of transport, the cultivated skill of riding it, traffic rules and regulations and a familiarity with them, and an ability to navigate routes and locate parking. Meanings consist of a range of elements, such as the social and symbolic significance and classification of a practice, with pertaining images and discourses/narratives. The chapter *Constraints to bicycle commuting in Oslo* elaborates on the cultural meanings of bicycle commuting in Oslo. For now it is enough to note that the social and

symbolic significance of bicycle commuting depends on its position within a range of interconnected practices, elements and the socio-cultural context (Shove, Pantzar, and Watson 2012, 62).

## Competing, connected and intersecting practices

Practices are connected to each other by sharing and/or competing for many of the same elements and carriers, or simply through co-location or co-existence, and some practices are more closely connected than others (Shove, Pantzar, and Watson 2012). The elements of individual practices, and their spatial and temporal dimensions, are affected by these connections, and a practice can therefore change as neighbouring practices change (Watson 2012, 491).

Commuting practices are intertwined with many other practices, such as work, family obligations, exercise and shopping. In addition, bicycle commuting intersects with many other practices taking place in the city space, such as walking and the driving of cars, busses, trams etc. Because these practices share the city road infrastructure, they have the potential to influence and condition each other. And, as Shove, Pantzar, and Watson (2012, 86) point out: “Some interactions result in mutual adaptation, others in destruction, synergy or radical transformation”.

Bicycle commuting and other forms of commuting have the same main social purpose of getting to work and home again. This means that the different commuting practices are in a direct competition for practitioners, or that they cooperate with each other. Commuting practices also compete for, or share, many of the same resources, some of them finite, such as money and space on roads and in cities, and for meanings and symbols, such as discourses of safety, health, responsibility, convenience, comfort and status (Watson 2012, 493). Social practice theory recognises the importance of the connections between different practices, either they are “loose-knit bundles” of co-location

or co-existence, or more closely integrated complexes (Shove, Pantzar, and Watson 2012, 81). A specific commuting practice cannot be studied completely separated from neither the competing nor the connected practices, which is one of the reasons why social practice theory provides a useful framework for studying bicycle commuting in Oslo. In the next chapter, I account for the research methods employed in the study.

## Research methods

The research methods employed in a study depends on the research questions asked, along with resource limitations, such as the time available to conduct research, the length of the report and data availability (Ragin and Amoroso 2011). In this chapter I introduce the study's methodological approach. I start out by making an argument as to why quantitative methods provide inadequate research models for studying complex and context-dependent social practices, before moving on to describe the advantages (and limitations) of qualitative research methods. The chapter also contains a thorough description of the methods used, and personal reflections of the ethical challenges and my own position as a researcher embedded in the field of study.

### Choice of method

Traditionally, research on transportation has been dominated by engineers and planners, and the social aspects were largely ignored until the 1990s (Hartmann-Petersen, Freudendal-Pedersen, and Nielsen 2007). Various quantitative studies have explored the influence of individual features, such as values and attitudes, and social and built environments, on travel behaviour. Quantitative research provides evidence for an influence of geographical elements, such as distance, topography, outdoor temperatures and precipitation, on levels of cycling. The same goes for city design, structure and transport infrastructure, where short distances, land use mix and urban density are found to promote cycling (Ellis, Nesse, and Norheim 2012, Tretvik 2008, Engebretsen and Voll 2011, Guell et al. 2012, Lea, Haug, and Selvig 2012). Quantitative studies have also examined the relations between geographical features, infrastructure and social circumstances, and their joint influence on travel choice (Guell et al. 2012). However, such research models fall short when it comes to explaining complex and context-dependent practices:

*(...) while they suggest that a complex web of physical, psychological, environmental and social factors influence commuting decisions and choices, such complexity is arguably difficult to integrate in a model that aims to simplify and generalise 'universal' behaviour (Guell et al. 2012, 234).*

Pre-existing contexts of meaning structure and shape the human perception of the world around us, including our bodily experiences, and the aim of social sciences is to access these structures and perceptions (Rendtorff 2009).

Broadly, it is said that while quantitative methods are useful for collecting a vast amount of information that makes sense to convert into graphs, numbers and statistics, qualitative methods are designed to study the shape and processes of social structures, individual behaviour and experiences.

(Winchester and Rofo 2010). The purpose of this study is not to examine representative samples that create results generalizable for a wider population, but to elucidate and thereby increase the understanding of specific practices in a given context (Neuman 2006). Researching the constraints to the propagation of a specific practice in a given area is a highly context-dependent process, and includes both structural and individual elements. Qualitative research methods take a more integrative approach than quantitative research models, acknowledging the complexity of the social world. As the aim of this study is to provide insights on a deeper level than the large surveys aiming at representative results, I regard a qualitative approach to be the most rewarding. Nevertheless, it is important to remember that the findings of this study reflect the concepts, language, models and theories that structured this study from the beginning, in which I as the researcher has had complete decision-making authority (Saldaña 2013, 7). Because of its subjective and intersubjective nature, qualitative research has limited transferability and replicability. Rigour and trustworthiness must instead be established by describing and documenting the different steps of the research process

(Bradshaw and Stratford 2010). Another way is to use multiple sources, methods, investigators and theories, often referred to as triangulation (Bradshaw and Stratford 2010).

The main bulk of empirical data in this study was collected by in-depth, semi-structured interviews with 20 commuters in Oslo. These interviews have made it possible to access knowledge about the meanings, competences and materials individuals employ as carriers of a practice – and not just which or what, but also why and how. In addition, extended document collection was conducted in order to provide valuable information of the historical path and the present conditions for cycling practices in Oslo. The findings from the interview data are supported by secondary sources, including research reports, newspaper articles and statistics. Through my own participation in various events and as a daily bicycle commuter in Oslo I have performed extensive, albeit not systematic, fieldwork. I also draw on experiences gained as a resident in Copenhagen, and some of the findings are underscored by making comparisons with the Danish capital. In January 2013, after working with the thesis for one semester, I started working full time as a communication consultant in the Agency for Bicycling, a municipal project in Oslo with the aim of streamlining the process of building bicycle infrastructure and promoting the bicycle as a mode of transport in the city. Working strategically with bicycle issues in the municipality, has added to my pool of knowledge of the topic. Being that deeply embedded in the field of study has given me both advantages and disadvantages for performing the research, a point I return to later.

## Collecting data

### *In-depth, semi-structured interviews*

Many researchers in social sciences are sceptical towards interviews as a method for studying social practices. The argument is that practices are so routinized or habituated that informants are not able to speak of them in a fruitful manner, and practices should therefore be studied in other ways, such as through video footage or ethnographic fieldwork (Hitchings 2012, 61). By placing practices and not humans centre stage, naming individuals as ‘carriers’ of social practices, recent theorising on social practice can also be seen to suggest that interviews are an inappropriate method in social studies (Hitchings 2012, Shove, Pantzar, and Watson 2012). If the point of a research project is to study precisely how a practice is performed, I agree that footage and/or ethnographic fieldwork are highly appropriate methods. When the point is to understand why individuals carry certain practices and not others, I side with Hitchings (2012, 62) and oppose the critique of interviews as a valid method for studying social practices. The room for personal reflexivity in Bourdieu’s model of the habitus opens up for “a sensitive form of self-evaluation” that can be initiated through talk, what Giddens refers to as discursive consciousness (Giddens 1984). Although the theoretical framework provided by Shove, Pantzar, and Watson (2012) places values, symbols, motivations and knowledge as a part of the practice itself and not belonging to the carriers, it is the carriers who employ the meanings through practice performances, and have the potential to change the practices through reconfigurations of the elements. And, as Hitchings (2012, 63) points out, “talk could logically provide a way of accessing these aspects”. By interviewing informants, the researcher helps them “develop a heightened sense of why they embody particular practices” (Adams 2006, cited in Hitchings 2012, 64). The interview is thus an efficient method for revealing



the meanings, materials and competences a carrier engages when participating in specific practices, and this knowledge may prove pertinent for initiating change towards more sustainable practices, such as bicycle commuting instead of fossil fuel-dependent commuting practices (Hitchings 2012, 66).

After collecting data through document collection and fieldwork for a few months, in September 2013 I started performing interviews with commuters. The process of selecting informants is described in detail later. The interviews were based on interview guides<sup>6</sup>, to ensure both content focus and conversational flexibility, leaving plenty of room for follow-up questions and in-depth accounts and digressions (Dunn 2010). The interviewees were asked about their present and past commuting habits/routines, which included relevant aspects of their personal histories and experiences. I also asked them to reflect upon their commuting practices, and upon bicycle commuting in Oslo in general. Each interview lasted from 30 minutes and up to two hours, and took place in the informants' own homes or offices, or in a designated room at the Centre for Development and the Environment. All of them were recorded on tape to avoid disturbances or distractions, and thereafter immediately transcribed in full. To get an overview of the massive amount of text, I produced a summary of each interview. Performing the final interviews made me realise that the amount of empirical data collected were approaching a point Glaser and Strauss (1967) call theoretical saturation, which is where each additional interview adds no more ideas or issues to the themes on which you are questioning. This awareness reassured me that the data collected was rich enough to provide relevant knowledge for answering the research questions at hand.

As pointed out in the chapter *Commuting in a social practice perspective*, a specific commuting practice cannot be studied in complete isolation. Bicycle

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<sup>6</sup> Appendix B.

commuting collaborates with, or competes for practitioners, with other commuting practices. The quality and volume of other transport mode infrastructure, the cultural meanings connected to other commuting practices, and knowledge and competence needed for participation, is highly relevant for the relative attractiveness of cycling compared to other commuting practices. It is therefore important to recognise that constraints to and enablers of other types of commuting practices also affect the recruitment and defection to bicycle commuting practices. One example is the public transport system, which is a competitor to cycling practices, but at the same time has the potential to enable cycling practices by making people less dependent of cars (Ellis, Nesse, and Norheim 2012). However, this is a study of bicycle commuting practices, and not an assessment of the different personal transport systems in Oslo. The interviews with informants were therefore largely centred on the materials, meanings and competence relevant for bicycle commuting. The study avoids digging into other types of commuting practices, but touches upon them when relevant to the understanding of the conditions for bicycle commuting.

### *Recruiting and selecting informants*

A vital step in the research process of identifying the constraints to bicycle commuting in Oslo was to gain insights into the routines of commuters in different life situations and with a variety of commuting needs and practices. In addition to a description of the informants commuting routines, I wanted to access the informants' personal perceptions of their own routines. Life paths and dominant projects, like getting an education, making a career, changing occupations or having children, are important for which practices people participate in (Shove, Pantzar, and Watson 2012, 78-79). It was therefore important to recruit informants in different stages of life, in different family situations and with different types of occupation. Based on the methodological

concept of information richness, I selected as many informants as I felt manageable within the given time-frame. This way I ensured a wide variety of participants and different commuting practices. I used criterion sampling, making sure that the 20 informants<sup>7</sup> represented a variety of travel needs, life situations, contextual circumstances and socio-economic status (Bradshaw and Stratford 2010). The demand for commuting practices comes from employment. A requirement was therefore that the informants had a full-time or a part-time job, or that they were students commuting to a university. Out of general democratic thinking, and because they are often seen as indicators of bike-friendly cities, half of the selected informants participating in the study were women (Baker 2009). The bicycle modal share in Oslo varies between age groups, which is partly the reason why I wanted a large age span among the informants. The youngest informant was 21 years old and the oldest 64 years at the time the interviews were performed. Within this span the informants represented all age groups. Since the research deals with commuting practices in Oslo, another criterion was that the informants either resided, worked/studied, or both, within the Norwegian National Road 150, better known as Ring 3, that encircles the city. In the process of selecting informants I drew their commute route onto a map. This was to ensure that the informants' personal experiences were relevant for answering the research question, and that they covered a wide range of routes in Oslo. A final criterion for the selection of informants was not having a commute distance regarded as unrealistic to cycle<sup>8</sup>. The informants' commutes ranged between 1.6 and 16 kilometres one way. Together, they represented a large span of commuting practices, and, since the study focused especially on cycling, more

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<sup>7</sup> For a complete list of informants, see Appendix A.

<sup>8</sup> 80 percent of bicycle trips are shorter than five kilometres, and only three percent are longer than 20 kilometres (Liva, Brechan, and Hjorthol 2011, 30).

than half of the selected informants commuted by bicycle regularly or occasionally.

The informants also covered an extensive range of employments and educations. Two of the informants were full-time students, and one was a part-time student part-time employee. Most of them had a full-time employment and one employer, but some of them worked part-time or had several employers. On average, the informants in the study was higher educated and with a higher income than the Oslo residents in general (Statistisk Sentralbyrå 2012, Kirkeberg and Epland 2007, Statistisk Sentralbyrå 2013a). This is likely to be partly a consequence of the employment criterion for becoming an informant. Another reason is the way the informants were recruited; through a well-educated social network and through an organisation known to have members with a higher socio-economic status than the average population (Dahlum 2011). For more detailed information about the informants and their commuting practices, see appendix A.

I used several methods to recruit informants to participate in the study. The most effective way to get in touch with people who commuted by bicycle was to ask for assistance from the Oslo branch of the cycling union SLF. SLF assisted me by posting an article on their home page, and spreading the link in social media. Several others, primarily personal friends on Facebook and employees at the Centre for Development, but also the cycling initiative Critical Mass and the bicycle forum Terrensykkel.no, shared the article, and I ended up with more than 70 people wanting to contribute as informants. I also made use of my own social network in Oslo, and asked my Facebook friends to provide me with names of people who fulfilled my informant criteria. I got 17 names this way, five of which ended up participating in the study. One of the informants I got in touch with by sending an e-mail to former journalist colleagues, and another I recruited on the street.

### *Document collection*

Ever since I moved to Oslo in 2011, and especially after deciding on a research subject for my thesis in the autumn of 2012, I have paid close attention to what has been written and said about cycling issues in Oslo, both in traditional news media and in social media. Through the media monitor Retriever I have been able to search for and collect relevant articles. I have also spent much time studying official documents, such as strategies, plans and reviews, particularly by the municipality of Oslo. In addition, I have reviewed a large number of research articles about cycling. I have accumulated a substantial amount of information that has been valuable throughout the research process. So far, the amount of studies on commuting practices in Oslo with a qualitative research design is modest. The research evidence from studies performed in Oslo, which I use to support the findings in my study, is therefore largely based on quantitative research models. The supportive evidence from qualitative studies comes from other cities and countries, which unfortunately makes them less relevant for supporting findings made in a local, Norwegian context.

### *Fieldwork*

Through observation, participation and personal engagement I have gained a high contextual understanding of the field of study. Hundreds, if not say thousands, of hours cycling in the city has provided me with first-hand experience of the conditions for cycling, which has proved useful for designing the study and collecting relevant data. Political debates on the subject, information meetings arranged by the municipality, and informal chats with dozens of Oslo residents have given me valuable inputs. The employment as a communication consultant in the municipal Agency for Bicycling has of course made a considerable contribution to my insights into the topic of research.

## Methodological challenges

In the interview process a methodological challenge, a consequence of the way I got in contact with my informants, became obvious. The informants who contacted me after reading the article published by SLF were either members of the organisation or followers on Facebook or Twitter. These informants were very engaged and interested in cycling, which had both positive and less positive effects on my research: Positive in the sense that these informants were 'easy' to interview, since mobility and cycling were subjects they were used to talk about and reflect upon, and also because they had much personal experience from cycling in Oslo. The problematic aspect was that being engaged with a specific bicycle promoting organisation, they may not reflect the general viewpoints of bicycle commuters in Oslo. However, some of the informants had come across the article in other ways, via their own Facebook friends, the initiative Critical Mass, web forums and others that posted the link. These informants were not directly involved in SLF, but of course, wanting to be an informant and actively sending an e-mail can be interpreted as a bicycle promoting action. Most of the informants who had shown an interest in participating in the study by contacting me seemed to have a greater awareness of why they embodied particular commuting practices and be more able to reflect critically upon their own commuter practices than some of the informants whom I had contacted and asked to participate. It was somewhat of a methodological challenge for the research that my informants consisted of two groupings, one which obviously had a stronger personal interest in the field of study than the other, hence being more used to discuss it with others and reflecting upon it than the majority of the other group. But, as Hitchings (2012, 66) concludes after performing various interviews in two different studies of social practices:

*(...) how people respond is probably as much insight as obstacle  
in so far as the ease with which they become critically reflexive*

*about their own practices says much about how contentedly practices were previously being carried.*

Another methodological challenge for interviewing people about their commuting practices was the informants' perceptions of my personal viewpoints and moral values. On several occasions informants, especially the ones that didn't commute by bicycle, made comments that indicated that my role as a researcher and student at SUM and the subject of my study affected their way of responding to certain questions. Asking detailed questions about people's daily routines can sometimes make them feel that they are doing something 'wrong', since "the patterning of social life is a consequence of the established understandings of what courses of actions are not inappropriate" (Warde 2005, 140). Challenging people by putting forward alternative ways of behaving (staging 'critical situations') can sometimes be the only way to get access to these understandings, but this measure might add to the feeling of inappropriateness (Giddens 1986, 41, cited in Hitchings 2012, 63). It might also be embarrassing to come off as somewhat of a product of the society you live in. One of my car-commuting informants, Henrik, was obviously affected by my questions and the environmental values he projected onto me when he told me that he "lamentably" commuted by car. At the end of the interview he took a deep breath before saying: "I'm not used to being grilled about [these things]. (...) I'm left with a contemplating feeling of 'why do I drive a car?'".

## Ethical reflections

Qualitative research requires great awareness of the researcher's position in relation to the field of research, including the informants. As a resident and a bicycle commuter in Oslo I am deeply embedded in the field of my own research. My passion for the bicycle as an urban transport mode is the reason for writing a Master's thesis on the subject. It was also the motivation behind the job application that got me the employment in the Agency for Bicycling.

When studying a subject of any kind, but especially a subject of deep personal interest, it is important to be aware of one's own pre-understanding, dispositions and prejudices, and the potential these have to affect the research design, the research process and ultimately the research findings. I have therefore been attentive to the challenges presented by my own position in the field of study and the implications of the subjective and intersubjective nature of qualitative research by continuously reflecting critically upon the potential consequences. Hopefully I succeeded in avoiding one of the many pitfalls of qualitative research; to access the field of study with bias and narrow-mindedness, or letting the subjective nature of the research process cloud critical reflexivity (Dowling 2010).

Prior to this study, a research proposal was approved by my advisor at the Centre for Development and the Environment, Harold Langford Wilhite. After sending a description of the safe and access-restricted management and storage of personal information in the research project, I received permission to collect data from the Norwegian Social Science Data Services. The informants were given a paper of informed consent<sup>9</sup> to read and sign prior to the interviews. The paper provided a broad outline of the research project and stated the terms and conditions for participation. Information about personal commuting practices is usually not regarded as sensitive or controversial, and none of the informants opposed the conditions for the interview. All of the informants were willing to answer the questions asked. One of the informants had a physical disablement that kept her from showering together with colleagues, and this was clearly a subject that was uncomfortable for her to talk about. In this specific case, it was important to guarantee complete anonymity.

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<sup>9</sup> Appendix C.



Becoming an employee in the Agency for Bicycling added further ethical challenges. An employment in the municipality provides access to confidential information about bureaucratic and political processes affecting the conditions for cycling in Oslo. The engagement has given me new knowledge on the subject, some of which could not have been used in this thesis for reasons of employment confidentiality. Fortunately, my research does not include an investigation of political or bureaucratic processes, and I have therefore avoided having to exclude relevant information. I have also strived to avoid mixing the roles of communication consultant and researcher. Another ethical challenge is making sure my professional and personal ties to the municipality do not interfere with my role as an independent researcher, especially since the subject of study is closely intertwined to municipal tasks and responsibilities, some of them performed by the agency I work in and the agencies we collaborate with. One could easily suspect a new and temporarily engaged employee for doing everything possible to please an employer, including taking steps to exclude or reduce the significance of research findings that reflects poorly on the latter. During my study I have strived to maintain complete loyalty to the research project at hand, and I have not left out critical voices or information that could reflect poorly on the municipality of Oslo.

## Why people commute the way they do

A precondition for identifying the constraints to bicycle commuting practices is to understand why people commute the way they do. This chapter identifies the management of everyday life, including aspects of time and space, and convenience, comfort, safety and health as significant to commuting practices. To illuminate the complexities behind the formation of commuting practices, a range of concepts derived from social practice theory are employed.

In social practice theory, individuals are seen as the carriers, and not the drivers, of practices (Shove, Pantzar, and Watson 2012, 7). Which practices people end up engaging in throughout life are partly conditioned by external structures such as where they are born, who their parents are, how they are raised, which schools they go, the people they meet and the friends they acquire. Pierre Bourdieu calls these externalities ‘social structures’. His concept of habitus, defined as a reservoir of embodied “systems of durable, transposable dispositions”, sheds light on how social structures guide human action (Bourdieu 1977, 72). The knowledge, values, tastes and preferences individuals develop is formed as the social structures become a part of them in a process of internal negotiation. This embodiment in turn generates principles of certain practices, opinions and tastes, and these principles – dispositions – is what Bourdieu defines as the habitus (Bourdieu 1996, 14-15). The habitus bridges “the effects of past experiences, resources, dispositions and tastes, and the content and character of *future oriented* aspirations and opportunities” (Shove, Pantzar, and Watson 2012, 157). Habitus starts developing from the moment we are born, and continues to do so as long as we live. Habitus can to a certain extent be regarded as shared in a society, since people are exposed to similar social structures. And even though habitus is not a fixed entity, it has enduring qualities (Bourdieu 1984, 77). It is both a production of the social world around us, but also an expression of it, and is thus a fruitful concept for

making sense of why individuals in a community share many of the same values, opinions, types of knowledge and behaviours. It is important to note that the habitus is not deterministic in that it opens up for an infinite number of new practices. Nevertheless, habitus makes the participation in some practices, such as bicycle or car commuting, more likely than others (Bourdieu 2007). As Wilhite (2012, 88) writes, a habit is a form for practice that “draws its strength from the habitus”. The word *habit* is commonly used in everyday Norwegian and English language, and was frequently employed by my informants during the interviews to explain their commuting practices<sup>10</sup>. Mari was one of them:

*Now I always ride the bicycle. I rarely consider using other means of transportation, because [cycling] is what I do, in a way. It's become more of a habit than a choice.*

There are many academic accounts of habit, and the distinctions between practice, habit and routine are blurry. A habit can be understood as a strongly embodied practice that is performed with a minimum employment of reflective thought, up to a point where cognition may in fact obstruct the performance (Wilhite 2012). A person starting to reflect upon her legs' movements while walking down the stairs, can quickly end up tripping on a staircase. Body techniques which involve few objects and are performed in uniform environments tend to become strong habits (Wilhite 2012). Reckwitz (2002) regards practices as being made up of timely sequenced routines or patterns of behaviour. Commuting is an example of such a daily routine, which might consist of putting on shoes, a helmet and a jacket around eight in the morning, before mounting a bicycle and pedalling, gearing and steering it along a specific route through the city while being attentive to pedestrians,

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<sup>10</sup> All of the interviews were conducted in Norwegian. The English word 'habit' is used here as a translation of the Norwegian word 'vane'.

potholes, traffic lights and cars, arriving at work 15 minutes later, parking the bicycle in the garage and locking it before removing the helmet. Faithful performances of practices are sometimes referred to as habituated or routinized practices (Shove et al., 2012). Asking about the informants' commuting practices revealed that most of them had one preferred commute, in this study referred to as a 'daily routine' or a 'routinized practice'. Having routines or habits seemed to be an important strategy in the management of everyday life. Geir identified one of his own management strategies – his commuting routine:

*The point is to not make a choice, but to have a rhythm or a system that you follow. And it's bicycle commuting I do. (...) If not, I don't think I would bother. (...) If you have to get up in the morning and check (...) how warm or cold is it today? Am I going to bother to put on wool and cycle? (...) When it's raining and it's cold and nasty, you have to have made up your mind in advance. (...) You just need to get up, pack the backpack and go.*

Mobility researcher Freudendal-Pedersen (2007) points out that to start each day by considering which mode of transport to use is an unmanageable situation for most people, and this is why we make routines for ourselves. Many of the informants admitted that their daily commute was normally not a result of active decision-making; they simply commuted in the same way as yesterday, and the day before, and the day before that again. Several of them explained that their commute was the result of routine and not every-day, rational decision-making. Marianne explained that cycling is something that 'comes natural' to her: "Unless there's a problem, it's not something I reflect much upon doing", she said. During the years, some of the informants had developed a strong relationship to a certain way of commuting or to a certain mode of transport, such as the bicycle or the car. As long as the distance and

the purpose of the trip allowed it, many of the informants would always start out with the idea of using their preferred mode of transport. Not until it proved to be too time-consuming, effortful or otherwise difficult, they would start looking at other options. Pål, for example, stopped bicycle commuting for a few years when he got a job further away from home, but started again as soon as the context allowed it. Having a strong preference for certain transport modes can be interpreted as outcomes of habitus; preferences shaped by the embodiment of certain social structures from past performances. One of the informants, Henrik, grew up in a small, car-based village in western Norway. He took the driver's licence as soon as he turned 18, and according to himself he hadn't been a single day without a car ever since. At the time of the interview, Henrik lived in the centre of Oslo and commuted three kilometres to work. Despite having access to a variety of transportation options, and regularly having trouble finding parking space, he commuted by car all winter. In the summer he rode his motorcycle. To Henrik, the car was an essential part of everyday life: "It means a lot me. (...) It's not like I use it every day, but just the fact that it's there, and that I can go exactly where I want when I want to". During the interview he kept mentioning the negative aspects of driving, like gas expenses, taxes, pollution, congestion etc. At one point he said: "It's only silly of me to keep driving". When asked about why he continued to car commute when he saw so many downsides to it, he answered:

*It's so easy, oh so easy. [I] go quickly from A to B. [I] can sit in the heated seat all the way to work and... it's a good question. Why do I smoke?*

As if he regarded his car driving habit an addiction, Henrik returned to his comparison with cigarette smoking when asked about what would make him give up car commuting:

*It would require a lot. If gas prices rose to 100 NOK a litre, then I would stop driving (laughs). (...) Many years ago I said that the day a pack of cigarettes costs 100 NOK I'll quit smoking. Now it costs 96, and I still haven't stopped. So...*

Through countless repetition, car driving had become strongly habituated and affected Henrik's notions of comfort and convenience. Its resilience made him disregard the negative aspects of driving. Exemplified by Henrik's story, the familiar is often perceived as easy, while the unknown seems difficult and cumbersome. Based on dispositions acquired through habitus, people rationalise and make sense of their everyday routines by creating and telling what Freudendal-Pedersen (2007, 71) calls 'structural stories':

*A structural story is used to make an apparent rationality as to why we behave the way we do, and guides us to perform certain actions. The structural story forms the foundation for people's perception of problems and their possible solutions. The individual's social practices produce and reproduce these structural stories.<sup>11</sup>*

Structural stories influence which commuting routines we take on, and are also used to justify them, sometimes by mending the discrepancy between attitudes and actions. People's ideas or image of their own routines work as additional conservative forces, cementing specific routines in the carrier: With each repetition a routine becomes more familiar, hence easier and more automatized (Freudendal-Pedersen 2007, 71). These mechanisms of familiarity and automatization, rationalised and cemented through structural stories, does not only apply to specific routines but also to specific transport modes, as demonstrated with the case of Henrik. And structural stories are not

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<sup>11</sup> My own translation.

only made by individuals, but exist in society as established ‘truths’, such as “cycling is dangerous” or “when you have children you need a car”. These ‘truths’ can create expectations of needs and demands before they actually arrive, or prevent practices from being tested (Freudental-Pedersen 2007).

Identity is an issue closely related to habitus and people’s routinized practices. When performances of a practice are repeated by an individual many times, the practice and the practitioner may become intimately connected, sometimes to the extent that the practitioner identifies himself or herself with the practice (Shove, Pantzar, and Watson 2012, 71). Because of their mundane character, it might appear a bit peculiar to think of commuting practices as having the potential of becoming identity markers, but, as Aldred (2010) demonstrates, in heavily-motorized societies the practice of cycling can affect the practitioners’ self-perception. Karsten was one of the informants with a strong devotion to bicycle commuting. He commuted to work every day with action cameras on his helmet and bicycle, recording traffic violations and poor road maintenance, videos which he posted on YouTube. Karsten frequently wrote about and debated the conditions for cycling in Oslo in social media, and he participated in meetings concerning the subject. To him, the bicycle had come to signify more than just being his preferred mode of transport; it had become a political interest and a cause to fight for. Although none of the other informants seemed to have an equally strong political dedication to cycling, several of them linked their cycling practices to issues of identity. “I’ve always regarded it [the bicycle] as an extension of my own body”, Angelica said. Marianne talked about how her bicycle needed to match her ‘style’: “I guess it’s a bit about making a statement”, she explained. Lillian was clear about which statement cycling made for her: “If you choose to cycle, you’ve taken a stand, in a way. You want society to move in a certain direction”.

So far, I have examined how habitus affects practices and routines, and vice versa. Personal stories illustrate how routinized practices become embedded in carriers through habitus, and how habitus influences peoples' present routines, and the routines they imagine having in the future. Through repetition the routines cement themselves in the carriers, both by the making of structural stories and by influencing the carriers' notions of convenience and comfort. Incorporating habitus in accounts of commuting practices makes it easier to grasp "the orderliness and predictability of people's actions when faced with apparent free choices", to understand the value-action gap and the persistence of practices that don't necessarily make sense from a rational, economic perspective (Warde 2005, 140). However, habitus is merely one source of agency influencing which practices people take on. The next subchapter illuminates how commuting practices are negotiated to fit in with the management of everyday life.

## Managing everyday life

The informants coordinate their commuting routines with other practices in order to make everyday life manageable, fulfilling needs and responsibilities, meeting demands and following aspirations. The process of coordination and management incorporates the structures and systems of society, including aspects of time and space. This context-dependence leads to a vast variety of commuting practices, where the same practice can be manageable and convenient for one person but completely unmanageable for another. As will be shown later, the shared contextual structures of society enables the performance of some practices and constrains the performance of others. It is also worth noticing that the life-paths people follow, including how they incorporate external structures and systems, are partly conditioned by habitus, which makes the concept relevant to other issues than the embodiment of



habits and routines. First, I examine the significance of time and space for commuting routines.

### *Time and space*

During the course of a day, people participate in a range of different practices which need to be coordinated through careful planning and scheduling of time, timing and space (Shove, Pantzar, and Watson 2012, 95). The informants' commuter practices had to fit into this schedule, which meant that they adjusted their commute in relation to other practices they participated in, and they also adjusted other practices in relation to the commute.

A single day consisting of 24 hours can be compared with an ever-changing puzzle, where the pieces represent all the different practices an individual carry throughout the day, including the amount of time the practices demand. The use of a puzzle metaphor might mislead readers into thinking that managing everyday life is a zero-sum game of different practices competing for exclusive time. This is not a correct assumption. The different pieces are not static. They are stretched, twisted, turned, combined and deleted, and some pieces disappear or pop up as the puzzle changes. The amount of pieces and their size, quality and content change day-to-day. One piece is structured by many different elements, including the other pieces, the puzzle itself and the person piecing it together. The daily commute is one such piece, and it can look very different from one puzzle to the next. Some of my informants regarded their commute as a 'necessary evil' where the main point was to spend as little time as possible on it. These informants tried to make the commute piece of the puzzle as small as they could, depending among other things on the distance, the modes of transport available to them, timing, the roadway system, the traffic situation and features of their own body. Kristine commuted about 13 kilometres each way, and saw the car as the only real option since the alternatives were much slower and less reliable:

*There need to be a reason for me not taking the car to work. (...) I've experienced wasting one and a half hours [by bus] on a stretch that takes less than 20 minutes by car. (...) That's not something you would frequently choose to do.*

The majority of the informants justified their commuting routines from a time-use perspective, performing the practice they considered to be the quickest. A few informants used travel modes they knew were slower, emphasising issues such as convenience, comfort, reliability and flexibility. However, almost none of them were willing to use a considerably slower transport mode than their quickest option, even if it meant breaking with ideological values. One of them was Pål, who expressed concerns for the environment, but still chose to car commute when he worked out of town for a few years. “By train it took too long”, he rationalised. Kristine called her habit of car commuting ‘environmentally reprehensible’, but justified it in terms of time-use.

A travel survey among workers and students in two Norwegian cities found that the relative time-use between different types of transport modes matter for how much people commute by bicycle. Respondents who commuted by both car and bicycle were prone to cycle more frequently when the difference in time-use between the two modes was small (Tretvik 2008). The informants in my study who had various commuting options with similar time-use rationalised their commuting routines using other arguments than the informants whose travel options were more differentiated. The former would juggle between transport modes, actively engaging in decision-making about their own commute based on a range of changing conditions, such as the weather, traffic, time, or their personal mood. The informants who only considered one option as viable to them, engaged in active decision-making to a much lesser extent.

Martin belonged to the first group. His commute took about 20 minutes regardless of whether he commuted by car, scooter, or bicycle. “Had there been a bigger difference in time-use, time-efficiency would have been priority number one”, he said. Instead, Martin included a range of contextual issues, such as the weather and his personal state of mind and body, when deciding on a transport mode for the day:

*When it's really cold and miserable and there's a lot of traffic dust and stuff, I take the car. (...) When I choose to cycle, I do it because the weather is nice and because it's a good way to start the day.*

Anna favoured the metro because it was her quickest option, but the small time-use difference between the bus and the metro opened up for reflexive decision-making based on other aspects of the commute:

*I frequently take the bus home. It takes a bit longer, but the bus stop is closer to work than the metro station. I think it's nice [to take the bus], because you see so much, and the route through Grønland and Gamlebyen is quite entertaining, and I like the change. So when I'm going home, I usually pass by the bus stop to check when the bus leaves. If it's a long wait, I prefer taking the metro. If not, I take the bus.*

Time was perceived in different ways by the informants, partly depending on how their commuting practices were bundled together with other practices, and how they affected each other (Shove, Pantzar, and Watson 2012, 87-89). As a consequence, minimising time-use did not always equal using the quickest transport mode available. Some informants combined their commute with other activities, such as exercising, shopping, or making arrangements by the telephone, thereby melting the commute piece of the daily puzzle together

with other pieces. Even though their commute sometimes took longer than it otherwise would have, they decreased the total time spent compared to performing each practice separately. In other words: By reducing the amount of pieces in the puzzle, they freed up space for other activities, such as spending time with their families and friends, or time needed to fulfil other obligations and responsibilities. Geir, a year-round bicycle commuter, expressed this way of thinking explicitly:

*Time-efficiency is the most important aspect. (...) And I count the exercise effect into that time. Now I get almost one hour of exercise every day (...) When I drive, I use nearly the same amount of time to commute, but then I have to work out in addition, which means a net loss of time.*

The student Caroline had a similar argument for cycling: “I’m sitting still a lot, reading or studying. (...) So it’s nice to move a bit, when I otherwise don’t have time for it”, she said. Pål appreciated the exercise bicycle commuting gave him, but, as opposed to Geir, he did not see it as a main reason to commute by bicycle. As a consequence, Pål didn’t regard his commute to be a time-saving combination of practices: “If it hadn’t been the quickest [option], I’m not sure I would have done it”, he said.

Since a practice is “a temporally unfolding and spatially dispersed nexus of doings and sayings” (Schatzki 1996, 89), how practices intersect in both space and time is important to account for in discussions of the “temporal texture” of daily life (Shove 2009, 18). In society, many institutions are strictly scheduled, including opening hours of schools, kindergartens, shops and offices, and social activities, like meetings, appointments and classes. Even marginalised and unemployed people living on the outskirts of society, such as beggars and homeless people, have to relate to these structures in the management of everyday life; digging for food in dumpsters outside shops after opening hours

or begging for money in the mornings as people go to work. The enactment of a practice depends on its ability to be weaved into the societal rhythm of daily life, and commuting practices can therefore be seen as individual enactments coming together in a larger collective movement (O'Dell 2009, 90, Shove, Pantzar, and Watson 2012, 128). The structure of society makes some practices, or, sticking to the puzzle allegory – puzzle pieces – more rigid and fixed both in time and space than others. This includes the informants' working hours, even though some employees have some flexibility with the possibility of home-office and flexible hours. Engaging in time-space fixed practices makes timing equally important as time, and predictability and reliability become essential features of the informants' commute. The interviews revealed that these features were more important to some informants than others, and especially to the parents of small children. Geir, a father of three school children, favoured the bicycle as a mode of transport for commuting because of the personal control of time and timing it provided him with:

*Especially when it comes to picking up the kids [from school], it is very, very advantageous to cycle, because I know exactly how many minutes I use to get home, and if I'm a minute or two short I can pedal a bit harder (...) With a car or public transport it varies more, and then I need to add some extra slack to be sure to reach everything I have to.*

Karsten explained why he preferred to pick up his children from kindergarten by bicycle in terms of flexibility:

*You get there fast, and then you have the possibility to slow down the pace. If the weather is nice we can walk all the way home, and if the weather is bad I can close the trailer and go straight home without the kids getting cold.*

The children's influence on Geir and Karsten's commuting routines lead to two other aspects of the management of everyday life. The first aspect is the number of pieces in each individual's puzzle. The second is the importance of each piece. To the extent that time spent on one practice is unavailable to another, practices can be regarded as exclusive and the enactment preventing other practices from being performed. And since some people are bound to perform specific practices, such as taking care of a child or working double shifts to be able to pay rent, they have less time to participate in other practices compared to people with more 'free' time on their hands (Shove, Pantzar, and Watson 2012, 128). Pred (1981, 16, cited in Shove, Pantzar, and Watson 2012, 79) calls fundamental and time-demanding practices, such as work and family obligations, the 'dominant projects' of which individual life paths revolves around. A person's obligations depend largely on their family situation, with some people participating in a higher number of time-demanding practices than others. Household travel demands and practices, including commuting routines, emerge from this overall coordination of daily life (Pooley et al. 2011, cited in Watson 2012, 491). The informants with young children expressed that being pressed for time influenced their commuting practices. As previously mentioned, Kristine felt guilty about being a car commuter, especially since there was a bus stop right outside her door and a metro line a few blocks away. She justified her behaviour in terms of her life situation, stressing the time saved and the mental health benefits car commuting provided her with:

*I've always lagged behind, and as a single mom it's all about making the everyday schedule work. So it's not just the fact that the metro only leaves every 15 minutes, but if you miss it then it's almost half an hour [extra]. When you have a car in the basement (...) you don't think about what time it is, and run to*

*make it, like you do the rest of the day. So it's a salutary thing for me, a stress reducer.*

Abdul, the father of five-year-old twins, experienced a similar situation. His concerns for the environment and health benefits motivated Abdul to cycle, but he found it too time-consuming and inconvenient to incorporate into his busy schedule:

*It took longer than I thought, and it was a bit too exhausting. (...) And I had to deliver the children at kindergarten first, go back home, and then take the bicycle and cycle to work. (...) And it's about being time-poor, you know. I have different positions in society in addition to a full time job. I enjoy cycling (...) and I want to bicycle commute (...) but I have to put myself in a position where I'm forced to do it, because if not there's always a good excuse.*

Hitherto, I have demonstrated how the informants adjusted their commuting routines to fit their daily schedule and the overall societal rhythm. The relative time-use and timing of a commute were important to all of the informants, but in what ways varied with the options available, the purposes of the commute, personal preferences, intersecting practices and contextual issues. In the next section, I examine how day-to-day changes are incorporated into the informants' commuting routines.

### *Day-to-day changes*

Although people have commuting routines, there is still a range of day-to-day changes influencing their travel decisions and sometimes “disrupting” the daily routine. Some changes have to be incorporated in order to meet work obligations, or because of social arrangements or personal errands after work.

The theft of a bicycle, car trouble, or a signal error on the railway line, are examples of sudden material obstacles demanding a revision of the commuting routines. Other changes are incorporated on a more voluntary basis, such as the weather, seasonal changes in the climate, traffic conditions, the compliance with a dress code that is not regarded as compatible with cycling, or simply people's physical or mental shape that specific day. The changes perceived as relevant for the commute lead the informants to revise and renegotiate their daily routines. Like Pål, a year-round bicycle commuter who occasionally commuted by public transport:

*If I'm going somewhere in the city where I need to be a bit dressed up (...) or if I'm doing something in the evening, like going to the cinema with friends or with my girlfriend (...) I might take the metro and a bus to work and then walk downtown, and then the metro back home.*

During the interviews, the informants were encouraged to talk about their commuting histories. Most of them explained more permanent changes in their daily commuting practice with either big or small life events. Major life events influencing commuting routines could be getting a new job closer to home, moving further away from the office or moving to another city or country, having a child, being involved in an accident, getting sick or experiencing illness in the close family, or simply growing old. Giselle used to take the metro when she worked at Helsefyr. When she got a job in the city centre, only a couple of kilometres from home, she switched to cycling. Eivind commuted by car for a while when his wife was sick. Kristine used to commute by bicycle when she lived and worked in the city centre, but a new home and a new job further away made her switch to car commuting. Smaller life events affecting commuter practices could be a sudden decision to lose weight, or to get in shape to participate in a competition. Some of the informants mentioned



changes in commuting routines as the direct consequence of making a personal discovery through experience. Baard made such a discovery after many years of commuting by bicycle in summer and public transportation in winter:

*It [the metro] is always really crowded, you have to stand up all the time, and then you have to wait for it to come, and wait when you switch metro lines, and... I discovered that it was much more pleasant [to cycle], even if it was bloody cold.*

Martin discovered the advantages of bicycle commuting with a trailer. On one occasion he had delivered his daughter to kindergarten in the trailer, and the trailer parking was full so he was forced to bring it to work. In addition to being convenient for transporting his photo gear, the trailer made Martin feel safer in traffic:

*The trailer has this strange effect on the people around me and on me too. (...) I feel safer with it (...) [I get] more goodwill [in traffic] (...) Maybe they think there's a kid in it?*

Because of the unintentional effects the trailer had on convenience, comfort and safety for Martin, it made him bicycle commute more frequently. The same happened to Giselle when she began to use studded tyres. The tyres made her aware of the advantages of cycling compared to walking during winter:

*It's frequently icy on the sidewalk, and I feel safer cycling with studded tyres. And when the snow melts and Slottsparken turns into a pool, it's much better to cycle than to walk.*

Reckwitz (2002, 255) calls these discoveries 'everyday crises of routines', and describes them as changes in the understanding and interpretation of a

practice, changes that occur when a person is confronted with their own knowledge inadequacy of a practice in a specific ‘situation’.

Up till now, I have argued that commuting practices are merely one of many puzzle pieces that need to fit together to form a manageable everyday life for people. This management is about making routines, fulfilling obligations, adjusting to the rhythm of society, incorporating day-to-day changes and big or small life events. The coordination of practices along the lines of time, timing and space is crucial to the informants’ commuting routines. The reason why Baard switched from public transport to bicycle commuting guides the analysis towards two other significant aspects influencing people’s commuting practices, which are dealt with in the following subsection.

## Convenience and comfort

All of the informants described their preferred way of commuting as being the most convenient and comfortable<sup>12</sup> option, and many called the alternatives inconvenient or uncomfortable. The term ‘comfort’ is related to “physical ease and freedom from pain or constraint” (Oxford Dictionaries 2014a). The term is closely connected to ‘convenience’, which can be defined as “the quality of being suitable to one's comfort, purposes, or needs”, and includes a number of different aspects, including time and space, physical and mental wellbeing, personal preferences, simplicity, effortlessness, and so on (The American Heritage Dictionary of the English Language 2009). Comfort and discomfort was mentioned by the informants in relation to physical and mental conditions caused by strain and perspiration, weather conditions, crowdedness, traffic, roadway environments, etc. What the informants regarded as the most

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<sup>12</sup> In Norwegian, the words ‘convenience’ and ‘comfort’ are closely related. The Norwegian word ‘bekvemmelig’ means both ‘convenient’ and ‘comfortable’, but is not a common word to use in everyday language. The words ‘praktisk’ (practical, convenient), ‘lettvin’ (easy, convenient, effortless) and ‘enkelt’ (simple, easy) are commonly used when referring to convenience in the sense of something being easy and practical, while the word ‘behagelig’ refers to something being comfortable and/or pleasant.

convenient and comfortable mode of transport depended among other things on the options available and their perceived qualities, the additional purposes of the commute, past experiences and routines, contextual factors such as distance, weather, topography and traffic situation, and material elements such as the roadway system and work facilities. Many of them compared the level of personal comfort on different transport mode options, and used comfort as an argument as to why they preferred one transport mode over another.

Baard's story is one example: The discomfort he felt on the crowded metro made him start cycling in winter, which he found to be much more pleasant.

Throughout life, people develop norms and expectations of comfort and convenience. These norms and expectations are a part of the habitus, and are to some extent shared in a community. The historian John Crowley (2001) argues that comfort is as much a cultural phenomenon as a technical innovation. He concludes that by 1800 people in Britain and America had developed the cultural assumption that physical comfort was a human entitlement, and that comfort could be sustained by objects such as stoves and umbrellas. As the cultural construction of comfort evolved, new items became viewed as essential, and items of luxury soon became items of necessity. In their review of comfort paradigms, Chappels and Shove (2004) demonstrate how meanings of comfort have changed dramatically over the last century. Sociological and anthropological studies of people's energy use suggest that the comfort expectations differ widely, sometimes regardless of people's income levels or access to infrastructure and services (Lutzenhiser 1992; Kempton et al. 1992; Kempton & Lutzenhiser 1982; Wilk & Wilhite 1987, cited in Chappels and Shove 2004). In a study of energy practices in Japan and Norway, Wilhite et al. (1996) demonstrate how heating strategies are related to culturally relative ideas about comfort and social interaction. There are also large cultural differences in how the relation between humans and the 'natural' environment is conceptualised. How much climatic variation is acceptable or

what is 'good' and 'bad' weather varies between individuals and societies, and what is regarded as comfortable in one setting or culture might be completely unsatisfactory to individuals in other cultures or communities (Chappels and Shove 2004). Although the majority of these studies focus on household practices and the management of indoor climate, their findings are relevant in other settings and activities. The changing cultural expectations and socially produced meanings of comfort are inevitably affecting mobility practices as well, such as bicycle commuting in Oslo.

The informants' different notions of comfort was one of the reasons for applying different strategies to achieve an acceptable level of comfort while commuting. Some, like Pål, found physical activity and being outside comfortable: "I live six minutes from a metro station and could get to work in half an hour. But to stand there waiting... I'm impatient", he explained. Others, like Kristine, found both physical activity and being exposed to changing weather conditions while commuting uncomfortable, and preferred to sit still on a bus or in a car. She talked about the ease of car commuting:

*And of course it's comfortable [to drive]. I have a garage in the basement at home and a garage in the basement at work, and so I don't have to mind the weather, I never get wet.*

Another aspect of comfort and convenience is related to what the informants regarded as the purpose of their commute. Some of the informants saw their bicycle commute as a workout session; they used sports gear and enjoyed to get worn out and sweaty on their way to work. Others saw their bicycle commute primarily as a way of getting from A to B, and tried to avoid breaking a sweat. The majority of the informants considered showering at work as inconvenient, exemplified by Giselle, who had a short bicycle commute where showering was unnecessary: "If I'd have to take a shower afterwards, it would be out of the question [to commute by bicycle]. I'd rather

shower at home and commute by public transport”, she said. To Geir, Baard and Eivind it was the other way around: “When I’m going directly to a meeting on Aker brygge where I need to be dressed up, I never cycle, because I sweat when I cycle and depend on showering afterwards”, Geir said. Some of the informants commuted by bicycle only during summer, and preferred using public transport in winter because they saw winter cycling as inconvenient and uncomfortable – even if the alternative took longer. Robert, for example, used seven-eight minutes on his bicycle commute during summer. In the winter he preferred to commute by public transportation instead, using about 20 minutes more each direction. His explanation for not cycling had to do with convenience:

*You have to dress in another way than if you’re taking the metro, it’s more maintenance, I mean; I guess you have to clean the bike quite often, with the road salt and everything, so it doesn’t rust. It requires more work. (...) I buy my way out of it.*

Convenience was also among the main reasons for the acquisition of 30-day tickets for public transportation. “I’m enthusiastic, but lazy. It’s so much more convenient to buy a period ticket [compared to single tickets]”, Vilde said.

All of the informants avoided commuting in ways that they found uncomfortable. The informants’ willingness to employ strategies to get rid of uncomfortable elements of their commute varied. While some informants used the same mode of transport all year, and went a long way to make sure that their level of comfort was satisfactory on their commute, for example by acquiring special clothes, bicycles or other gear, others simply switched to another mode of transport. Pål struggled for years with cold hands when bicycle commuting during winter. It did not make him switch transport mode. Instead, he bought many different pairs of gloves over the years, until he finally found the solution: Gloves with a chargeable heat element inside. The

bicycle-commuting informants who regarded other modes of transport as equally or almost equally convenient, were more prone to stop bicycle commuting during winter or in bad weather because they found it uncomfortable, and they regarded the alleviating measures to be too inconvenient compared to switching transport modes. “I don’t cycle if it’s pouring down. I guess it’s a comfort thing, I find it more comfortable to take the metro, and it takes about the same amount of time”, Lillian explained. As already mentioned, several of the informants considered practices they had never tried to be inconvenient and uncomfortable. Marianne was not interested in applying measures to be able to cycle during winter:

*I don’t have the equipment or the tyres for it. And I’ve sort of never done it before, so I guess I think it’s a bit... If there’s a lot of ice and snow I find it a bit uncomfortable.*

These examples demonstrate the way human behaviour is guided by the embodiment of past experiences, structural stories, predispositions and knowledge (or the lack of it). Had Marianne tried using studded tyres, she might have found it to be convenient. Had Giselle tried showering at work, she might have discovered that it wasn’t especially inconvenient. Perhaps Geir wouldn’t need to take a shower afterwards had he attempted to cycle a bit slower to Aker brygge. And had Robert tried cycling in winter, he might have enjoyed it.

This chapter section has provided evidence of the significance of convenience and comfort to the informants’ commuting routines. Their personal expectations and notions of convenience and comfort are largely an outcome of physical and embodied predispositions, knowledge and preferences shaped by previous experiences and routines. The next section focuses on the significance of safety and health for commuting practices.

## Safety and health

Concerns about personal health and safety<sup>13</sup> influence commuting practices in various ways. The informants who preferred active commuting mentioned health benefits as one of the main reasons. The informants did not explicitly mention safety as an important feature of their preferred commute, but the importance became apparent when the informants talked about cycling. This indicates that safety is not an issue as long as a transport mode is considered to be safe, but becomes a major issue when a transport mode is regarded as unsafe.

During the interviews, the informants talked interchangeably about the lack of safety as an emotional state provoked by a given traffic situation, and as the general risk of accidents, injuries and death associated with cycling practices. Many of the informants mentioned traffic accidents involving cyclists, which they had been informed of by the media, and some of them knew people that had been involved in bicycle accidents. Several informants mentioned the fatal accident at Ring 2 in October 2012, where two cyclists collided on the sidewalk and one of them fell into the road and was run over by a bus (Tranøy, Enerstvedt, and Neumann 2012). Most of the bicycle-commuting informants remembered experiencing frightening traffic situations, so-called ‘close calls’, and a few of them had personally been involved in one or more accidents. The informants’ knowledge, and direct and indirect experiences of accidents, affected their commuting routines in different ways. Pål, for example, flew over the handlebar and broke his nose when a car made a right turn in front of him. In the interview he mentioned the risk of dying or getting injured as disadvantages to bicycle commuting, but he claimed not to be afraid, and he had no intentions of giving up commuting by bicycle: “Many find it so terribly frightening to cycle in Oslo. I don’t. But you have to stay alert”, he said.

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<sup>13</sup> Definition of safety: “The condition of being protected from danger” (Oxford Dictionaries 2014b).

Martin bicycle commuted less than before, and told me that one of the reasons for this change was the feeling of anxiety after being involved in accidents. “I used to smile and be all ‘happy go lucky’ you know, but then I crashed more and more (...) as you get older you become less willing to take risks”, Martin said. Although Guro had commuted by bicycle in Oslo for many years, she found the city traffic, and especially the tram rails, trams and buses, to be scary. Guro’s anxiety was fuelled by the fact that a friend recently had gotten run over by a truck when cycling. “She was a hair’s breadth away from getting killed”, Guro said.

A notable difference could be detected between the informants who cycled in Oslo on a regular basis and the ones who didn’t. Marianne used to find it very unpleasant and scary to cycle downtown Oslo, but when she moved there she discovered that it was less frightening than she thought:

*It was a barrier that I had to cross to see (...) that it was okay.  
After a while I started cycling a lot more, and in the city too,  
because I got over the fear of traffic.*

Angelica, who regarded the bicycle as her primary mode of transport, put it like this: “It’s extremely dangerous [to cycle]. I’m not afraid, but you really have to watch out”. Several of the other informants who frequently bicycle commuted had similar comments about not being afraid, while simultaneously stating that it was unsafe to cycle. This is not to say that none of them got scared from time to time. “It’s frightening when a car goes past you really fast and honks (...) because you’re so vulnerable”, Mari said. These statements imply a willingness to accept the risks associated with cycling. The willingness among the bicycle-commuting informants to accept risk without being constantly afraid shows how repetition and routine enable and cement practices. This agency is highly visible in Marianne’s story about how



experience, competence and knowledge made cycling in the city centre easier and less frightening.

Not all of the informants were able to shake off the fear and accept the (perceived) risk involved. Car commuter Kristine only used her bicycle for exercising in the forest, and tried to avoid cycling in traffic:

*I'm terrified (...) I always wonder what's around the next turn (...) the cars are way too close (...) In the road there are plenty of potholes and bumps, things you can hit, and if your bicycle takes a small turn you crash into a car.*

Fear and anxiety was also one of the issues that kept Vilde from bicycle commuting more often:

*I'm often quite nervous when I cycle, I do it very cautiously, and I wear a helmet. There have been a few incidents when I've gotten really frightened, where I've almost been hit by a car. Then I get very shaky.*

Winter cycling was regarded as being even more dangerous than summer cycling, because of snow, ice and darkness. Vilde only cycled during summer:

*To ride a bicycle on ice sounds terrifying. Or, I can understand it if you have studded tyres. I've never tried that. Maybe it works just fine. But it's cold and... I don't know. I just don't even think of it as an option.*

Although safety is identified as significant for commuting practices, the willingness to accept risks associated with cycling was higher in the cases where bicycle commuting was perceived as the most efficient, convenient and comfortable option by the informants.

At the same time as being the only transport mode associated with danger and risk by the informants, the bicycle was also the only transport mode (except from walking) identified as a provider of health benefits. These benefits were mentioned by all of the informants, and several of them regarded health benefits as main reasons to bicycle commute. Numerous studies document the prominent position of exercise and health as motivators of cycling practices (e.g. Tretvik 2011, Kummel and Nordström 2013a). Many of the bicycle commuters in my study were engaged in either mountain biking, road cycling, or both. Several of the male, bicycle-commuting informants had participated in cycling competitions, two of them being members of a sport's club for cycling. Baard's main source of daily exercise was his bicycle commute, and the reason he gave for starting to bicycle commute in winter shows the strong link he made between fitness and cycling:

*When I stopped bicycle commuting it meant that I stopped exercising, and then I gained weight. (...) So I did it [started bicycle commuting in winter] a bit to keep my body weight more stable.*

The same applied to Geir, who regarded his daily bicycle trips to and from work as a combination of a workout session and a commute:

*It [the bike commute] is my primary source of exercise (...) and if I have 10-15 minutes extra I might use them to cycle some more. I sometimes take detours on the way to work or going home, use them as warm-up before I drop the backpack at home and run some intervals.*

Pål's main motivation to bicycle commute was to save time, but exercise was an important side effect. "They say you're supposed to be physically active for one hour every day, and bicycle commuting almost gets me there", he said.

Karsten had a number of different reasons for bicycle commuting, among them physical activity: “It’s a way of sneaking a bit of exercise into everyday life (...) instead of sitting on my butt on the bus for 30 minutes”. It wasn’t just the men who valued the health benefits of active commuting. To Lillian, exercise was the main motivation for bicycle commuting: “Being fit is something that is important to me. I like to stay active”, she stated. Guro had a short commute of 1.5 kilometres, and chose to walk instead of cycle in order to increase her level of physical activity. “Exercise is more important than saving time”, she explained. Most of the other informants saw it as more of a bonus than a reason in itself to bicycle commute. Angelica had a slightly different approach to the issue of physical activity: “To me, the bicycle is more than just a transport mode. I have to move, get warm; it’s almost like a form of therapy, a necessity”, she explained. All of the non-cycling informants also identified the health benefits of cycling. At the same time, the side effects of exercising, such as sweat and physical strain, were frequently mentioned as reasons to not bicycle commute because of the negative impacts it had on time-use, comfort or convenience.

In this chapter section, I have demonstrated the way safety and health issues influence people’s commuting practices, especially in relations to bicycle commuting. Bicycle commuting and cycling in Oslo was generally associated with a low level of safety and a high level of health benefits. The low level of safety made some informants disregard the bicycle as a mode of transport, while the high level of health benefits was a main reason for other informants to bicycle commute. The willingness to accept and manage risk depended among other things on experience and competence, how well bicycle commuting fitted into the management of everyday life, and how convenient and comfortable cycling was perceived to be by the informants.

The purpose of this chapter has been to provide answers to why people commute the way they do. Throughout the chapter I have illuminated how commuting practices are taken on, sustained, altered or abandoned for reasons of everyday life coordination, time-use, convenience, comfort, safety and health. The informants adjusted their commuting routines to fit into their daily schedule and the overall societal rhythm. Commuting practices are merely one of many practices that need to fit together in the management of everyday life, which is about making routines, fulfilling obligations, incorporating day-to-day changes and big or small life events. The relative time-use and timing of a commute were important to all of the informants, but time was perceived in different ways, partly depending on how their commuting practices were bundled together with other practices, and how they affected each other. The informants commuted in ways that were convenient and comfortable to them. Their personal expectations and notions of convenience and comfort were partly outcomes of physical and embodied predispositions, knowledge and preferences shaped by previous experiences and routines. Safety and health issues also influenced the informants' commuting practices, especially in relations to bicycle commuting. Bicycle commuting and cycling in Oslo are generally associated with a low level of safety and a high level of health benefits. Safety issues were partly overcome by acquiring high levels of competence and embodied experience of cycling and bicycle commuting.

The next chapter takes a closer look at the constraints to bicycle commuting in Oslo, including the barriers for the recruitment of carriers and the performance of the practice.

## Constraints to bicycle commuting in Oslo

The previous chapter uncovered the underlying drivers of commuting practices in perspective of habitus and routine. The management of everyday life, including aspects of time and space, convenience, comfort, safety and health were highlighted by the informants as important for their commuting routines. This chapter identifies the main constraints to bicycle commuting in Oslo, and their interdependent connections, by examining the relations between the informants' commuting practices and culturally constructed meanings and social connections, competence and knowledge, material objects and infrastructure, and contextual issues such as distance, topography and weather. Throughout the analysis, cultural norms and expectations of convenience, comfort, safety and health are discussed in relation to the material, contextual and cultural elements of bicycle commuting in Oslo.

It hardly comes as a surprise to anyone that this study identifies the bikeway infrastructure in Oslo as one of the greatest constraints to bicycle commuting in the city, or that bad weather, winter, hills and long distances discourage both cycling and other forms of active, outdoor commuting; the effects of these issues have time and again been documented through empirical research, statistical analysis and travel surveys. What is less apparent and more difficult to document, are the links between the elements making up the practice of bicycle commuting, and how these elements influence and shape each other, and together form complex structures that either encourage or discourage bicycle commuting. This chapter discloses some of these complex links and structures.

The separation of different constraints under subheadings in this chapter is constructed to make the analysis reader friendly, and does not reflect real or static divides. All of the elements that make up a practice interrelate, and are

in many ways inseparable. The same goes for the connected, competing and intersecting practices, and the elements they consist of. An attempt to include all of the practices, elements and connections between them, and disclose the ways in which they affect bicycle commuting in Oslo, is doomed to fall short. The constraints discussed in this chapter are identified by including the most apparent and directly involved elements and connected practices, leaving a vast piece of the canvas untouched. Even though the complex processes behind stability and change in society can never be fully uncovered, the findings in this study still provide relevant answers to the research question at hand. The first element to be examined is Oslo's bikeway infrastructure.

## Transport systems and bikeway infrastructure

In this study, poor bikeway infrastructure is identified as the biggest constraint to bicycle commuting in Oslo because of the consequences it has on the time-efficiency, convenience, comfort and safety of cycling, and thus also the cultural meanings connected to the practice. This chapter shows that accidents, people's direct and indirect experiences of cycling, and a high media focus on the conditions for cycling in Oslo had led the practice to become linked to danger and risk, which is a major constraint for the propagation of the practice. Furthermore, I argue that the fragmented bikeway system, consisting of various different types of solutions, along with confusing traffic regulations, demands relatively high levels of knowledge, competence and skills for the successful performance of the practice. These demands work as additional constraints for the recruitment of new practitioners. The same goes for material demands to manage infrastructural challenges caused by a lack of road maintenance.

It might seem obvious that material artefacts and infrastructures influence human behaviour, but material agency is surprisingly often underestimated or overlooked completely in social science research on consumption (Wilhite

2012). Objects and technologies come with embedded knowledge or ‘scripts’ that have the potential to both enable and limit human action. The scripts can be interpreted in different ways depending on the socio-cultural setting, which again has consequences for the human actions being enabled or inhibited. A practice entity is made up of meanings, materials and competences (Shove, Pantzar, and Watson 2012). Put simply, you need a bicycle, cycling skills and relevant know-how to be able to practice cycling. Commuting practices consists of a massive range of material objects and infrastructures. The minimum of material objects and infrastructure needed to car commute is a car that works, driveable roads between home and place of work, access to a fuel station (or an electric charging station), parking facilities at home and at work, and a workshop nearby in case the car needs service. Except for the fuel station, much of the same applies to bicycle commuting. In the same way people’s daily lives are organized to fit in with the time schedule of the larger society, commuting practices both shape and are shaped by the material infrastructure – in this case the streets, the public transport system and various facilities at home and at work. These elements act as enablers of or constraints to the performance of a practice, affecting aspects of time, convenience, comfort and safety. According to Watson, the European decline of cycling from the mid-20<sup>th</sup> century can be understood as auto-mobility winning the systemic level competitions in urban planning and regional development, and the defection from cycling as partly a result of successful recruitment to driving (2012, 493). In Oslo, the extensive public transport service system needs to be included in the explanation of the defection from cycling in the second half of the 20<sup>th</sup> century. In the same way that the material infrastructure can affect recruitment to a practice and thereby its cohort of carriers, it can also work in reverse: The material infrastructure can be adapted to fit to the carriers and the way they perform the practice (Shove, Pantzar, and Watson 2012).

My informants commuted in ways that made sense to them from an individual perspective of time, space, convenience, comfort, safety and health, and used these parameters to compare the different modes of transport available to them. Many described their commuting practices as being faster, easier or more comfortable than the alternatives. What they conceived as the best option for them was largely shaped by the accessibility, time-use and quality of different transport systems; issues that are largely conditioned by material infrastructure. As described in the previous chapter, the single mother and career woman Kristine experienced a constant time pressure, and did not want to risk spending two or three times longer on commuting than her quickest option. The road infrastructure and transport system allowed Kristine to avoid rush traffic by car, but not by bus, which is one of the reasons why she chose to commute by car, even though she had a bus stop right outside her front door. To Vilde, the metro was the most convenient commute option, with its nearby stations, frequent departures and available seats. A metro line is a transport system heavily reliant on proper material infrastructure, such as separate rails, carts, electric grid and tunnels. As opposed to the metro, bicycles can make use of infrastructure made for other transport modes, including boardwalks, car lanes, bus lanes and walking paths, and the importance of a dedicated infrastructure for cycling might therefore seem less exigent than for other modes of transport. Since much of the roadway infrastructure is shared or divided between different modes of transport, it is also difficult to treat bikeway infrastructure as a completely separate matter. Some informants pointed to other transport infrastructure, such as tram rails, bus stops and street parking, as elements reducing safety and accessibility for cycling. Others regarded infrastructure built primarily for other types of transport modes, such as bus lanes and walking paths, as infrastructure making it better to cycle. Nevertheless, the informants in the study identified poor bikeway infrastructure as one of the biggest constraints for bicycle commuting



practices. The informants' general impression of the city's bikeway infrastructure can be summed up in the words of Kristine: "The quality is poor, and there's too little of it". The remaining part of this chapter is dedicated to describing the different ways the bikeway infrastructure constrains the performance of and the recruitment to the practice.

To some informants, the main issue with the poor road infrastructure for cycling was the negative effects it had on time-use and convenience. Others pointed to the lack of safety and comfort as the biggest problems. The mix of different types of bikeways, and the missing links between them, was a returning subject during the interviews. Vilde, an informant frightened of cycling in Oslo, commented: "It's really odd with these short stretches [of bike lanes]. (...) suddenly they stop, and then it's like 'okay, where do I go from here?'" Lillian, a seasonal bicycle commuter, made a similar remark: "It's nice when they build new bike paths, but there's no continuity", she said. "It puts you in a situation where you have to use your imagination", Eivind, a dedicated year-round bicycle commuter, stated. For most of the bicycle-commuting informants, cycling is something they did in spite of, and not because of, the city's bikeway infrastructure, which they described as absent or extremely deficient. The below quote by Robert reflects the common opinion among the informants who bicycle commuted:

*Oslo is not a bike-friendly city, but for me cycling is the most efficient way of getting around, and so I've chosen to live with it. Or, I've realised that I have to live with it.*

Martin, an occasional bicycle commuter, put it like this: "Each time you need it, it's not there". Eivind was extremely annoyed and frustrated by what he described as "a patchwork of bikeway solutions":

*No solution is the same. One street can be completely different from another. So what are you supposed to do? No wonder there's chaos when the bike lanes suddenly disappear, and the cyclists have no place to be.*

Geir was the exception among the bicycle-commuting informants. Even though he wasn't pleased with the bikeway infrastructure in Oslo in general, he described his commuting route along Frognerstranda as satisfactory:

*It's protected from other traffic (...) the first six-seven kilometres (...) and no traffic lights the first four kilometres (...). I find that quite unique, really. And it's pretty efficient too, which is good.*

Many of the informants, among them Marianne, claimed they would have cycled more if the bikeway infrastructure had been better:

*I cycled last week, and I remember getting really annoyed by the fact that it was so difficult to get there, so it [poor infrastructure] limits how much I commute by bicycle.*

Karsten, an experienced year-round bicycle commuter, had no trouble understanding the relatively low bicycle modal share in Oslo:

*If people have to stop at each intersection, and get off the bicycle if they're nervous, cycling is not an attractive option. (...) The shortcuts are reserved car drivers, and the cyclists have to take the detours.*

Discussing the possibility of commuting by bicycle, many of the non-cycling informants placed heavy weight on the importance of a satisfactory bikeway system. To Anna, this was a critical element:

*I don't think I would ever cycle on a road in Oslo without a bike lane. (...) Then I'd rather cycle on the sidewalk, where I might get ugly stares from pedestrians, but at least they can't run me over in the same way a bus or a car can.*

Deficient infrastructure has negative effects on time-efficiency, and the convenience and comfort of bicycle commuting, which makes the bicycle less able to compete for carriers with other modes of transport. However, the most severe constraint caused by poor infrastructure is the low level of safety associated with cycling in Oslo. Most of the informants perceived it as dangerous to cycle within the city, primarily because of the lack of a bikeway system physically separated from motorised traffic and pedestrians. It wasn't so much the infrastructure in itself that made them feel unsafe; rather it was sharing the roads with drivers described as aggressive or inattentive, or sharing the sidewalks with 'unpredictable pedestrians'. Poor maintenance and confusing traffic regulations were also seen to provoke dangerous situations for cyclists. The existing bikeway infrastructure made up of bike lanes next to car lanes, separated with a white, dotted line, and paths made for both walking and cycling, were generally not regarded as satisfying solutions by the informants. "Just because there's a dotted line there, doesn't mean that it can't be crossed by a car wheel", Kristine said whilst explaining why she was afraid of cycling on bike lanes. During the interviews, issues of infrastructure and traffic conditions were talked about interchangeably, and the latter was frequently seen as a consequence of the former. Several of the informants had personal stories of dangerous situations occurring in traffic, stories which they told when describing poor conditions for cycling in Oslo. "I'm always checking the mirror, I have a mirror on the handlebar, and I often get off the bicycle and jump onto the sidewalk if there's a bus coming", Vilde explained. Guro considered other transport infrastructure and traffic a threat: "The public transport makes it scary to cycle in the city. It's really frightening to get

caught in the tram rails (...) and the buses are huge”, she stated. Baard, an experienced bicycle commuter, expressed his way of thinking in traffic: “You regard all car drivers as potential killers, in a way”. Robert, a seasonal bicycle commuter, concluded: “Cyclists tend to end up between a rock and a hard place”. Another returning safety issue was the dissatisfaction with the maintenance of the existing infrastructure, especially in the winter season. To Guro, poor maintenance was part of what made cycling in winter unattractive:

*The streets are often poorly maintained during winter, with snow on the side of the road and in the bike lanes, and a lot of gravel ending up in the bike lanes, which causes the streets to become narrower and make cycling even scarier.*

The constraints posed by poor infrastructure and maintenance made several of the informants disregard bicycle commuting as a relevant option for them. In addition to being a constraint for the recruitment of carriers, the infrastructure made the bicycle-commuting informants employ a range of ‘survival techniques’ in order to increase their personal safety and comfort. Some informants, like Angelica and Guro, took detours to avoid heavy traffic. “I choose the small streets to avoid traffic, pollution and people. It takes longer, but it’s worth it”, Angelica said. “I try to find smaller roads with fewer big, heavy vehicles”, Guro stated. Some informants preferred to cycle on the sidewalk instead of in the bike lane or car lane. “I only use the sidewalk, because I find it uncomfortable to cycle in the road together with the cars”, Caroline explained. These strategies frequently decreased time-efficiency and made bicycle commuting less convenient. Some informants managed inadequate road maintenance, such as bumps, potholes, leaves, snow and ice, by acquiring a range of different types of bicycles and equipment. Eivind, one of the informants who bicycle commuted all year, had a variety of bicycles and gear, which he employed to adapt to the (changing) conditions:

*I have an off-road bicycle, which I use in the summer, and another one with fenders, which I use in bad weather, and one with studded tyres to use in winter. I had a racer bicycle, but it got stolen and I haven't bought a new one. (...) There are so many curbs and shards of glass everywhere, and [off-roads] are much more robust. The bikeways in Oslo are not like the ones in Copenhagen, you find all sorts (...)*

A way of compensating for the additional time spent and the inconveniences caused by the infrastructure was to bend or break the traffic rules. This tactic was by some informants used as a personal safety measure, as in the case of Lillian:

*It's like they [road planners] didn't think that cyclists need to cross too, turn left or... it's like they haven't considered it from the cyclists' point of view. (...) And then it's up to you to find solutions, and you easily end up breaking the law. (...) and sometimes you cut a few corners because it seems safer to break the rules than to follow them.*

The 'bad' behaviour of cyclists in Oslo and the seemingly hateful relationship between car drivers and cyclists are returning subjects of debate in the media (e.g. Ramnefjell 2014). A research report identifies inadequate road infrastructure and confusing traffic regulations as the main reasons to poor traffic interaction between cyclists and car drivers (Bjørnskau, Sørensen, and Amundsen 2012). My findings support these conclusions, adding further depth by providing insights into the ways rule-breaking bicycle commuters justify their actions. After describing his behaviour in traffic when bicycle commuting, Eivind commented: "The cyclists in Oslo are probably a bit daring. You have to be. You have to be a bully to survive".

Several informants claimed that the combination of deficient bikeway infrastructure and flawed traffic regulation made cyclists a ‘pariah cast’ in traffic, forcing them to break rules either purposely or unintendedly in order to stay safe and to get from A to B without using too much time. In the words of Eivind: “I break traffic rules every day. I cycle through red lights, not because I enjoy it, but because it feels safer”. Guro explained her rule-breaking behaviour like this:

*I feel like a hunted animal. I don't trust the cars, and so I try to keep an overview and take complete responsibility for my own personal safety. I cycle through red lights, against one-way traffic, on the sidewalk...*

To Angelica, violating traffic rules was a way of maximising both comfort and safety: “If there had been a nice bike path separated from the cars, I wouldn’t mind waiting [for the light to turn green]”, she explained. Marianne broke the rules to retaliate what she saw as traffic regulations favouring car drivers without minding the cyclists:

*Sometimes I take some liberties, where I can and when it's safe, to compensate for the fact that I have to yield all the time (...) and to make it worthwhile to cycle.*

A municipal report from 2011 concludes that the bicycle infrastructure which is in place is made in accordance with the current norms and standards, but that it has deficiencies when it comes to user-friendliness, accessibility, maintenance and safety (Lode and Eliassen 2011a). Another assessment of the bikeway infrastructure in Oslo states that bicycle infrastructure is given low priority along the most important routes and in the city centre, which makes the traffic safety and accessibility for cycling low (Kummel and Nordström 2014a). On average, 40 people per week are treated at the emergency room in

Oslo for bicycle accident injuries (Løken 2014b). An in-depth analysis of mortal bicycle accidents conclude that infrastructural issues were a contributory factor in seven out of ten accidents (Kagge 2014).

The inadequacies of the bicycle infrastructure are reflected in people's general opinion of the conditions for cycling in the city. In a survey among Oslo residents who already cycle, and those residents who imagine doing so in the future ('potential cyclists'<sup>14</sup>), 67 percent are dissatisfied with the standard of the bikeway infrastructure in Oslo, and 60 percent consider cycling in Oslo as unsafe. In the same survey, respondents were asked to rank various measures to make cycling more attractive to them. 75 percent of the potential cyclists gave top priority to traffic safety measures, while 14 percent valued measures to increase accessibility and speed/flow as highest (Kummel and Nordström 2013a). A comparative study with the purpose of determining the correlation between a city's bicycle modal share and climate, weather, topography, bikeway infrastructure along with many other factors, found the strongest correlation with a high bicycle modal share to be a widespread and compact network of bikeways with high quality maintenance, indicating the significance of infrastructure for cycling levels (Lea, Haug, and Selvig 2012).

Another finding related to infrastructure, was the lack of faith among the informants in the municipality of Oslo's intentions to rank cycling higher than other modes of transport in the city, and to take the bicycle seriously as an important transport mode. "All roads are made looking through the eyes of a car driver (...). The prioritisation in this city is completely wrong", Eivind stated. Many of the informants also argued that car drivers did not respect the bikeway infrastructure, using the bike lanes as parking space. "Once I saw a

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<sup>14</sup> The survey splits the respondents into three groups based on their cycling practices and attitudes towards cycling; respondents who cycle "no matter what", respondents who cycle when it feels safe, and finally respondents that do not cycle today but has a positive attitude toward cycling and would like to cycle in the future if the conditions improved. The latter group is called "potential cyclists" (Kummel and Nordström 2013a).

police car parked in the bike lane, and the police officers were eating kebab (...) even they don't give a damn", Pål said. A numerous newspaper articles have been published on the slow progress of building bikeway infrastructure and the poor conditions for cycling in Oslo. In the autumn of 2014, the newspaper *Aftenposten* ran a series of articles under the heading *Sykkelpatruljen*<sup>15</sup>, where they encouraged readers to report places in the city with poor bicycle infrastructure on a digital map. More than 2 000 reports have so far been made, indicating significant dissatisfaction among the users of the bikeway infrastructure (Osloby 2014, Ringnes 2014).

When a practice involves few material objects and is performed in a uniform environment, the chances of it becoming a strong habit is higher than when many objects are involved and the environment it is performed in varies (Wilhite 2012). Low maintenance and inconsistent bikeway infrastructure creates unpredictable environments and increases the material demand, which makes bicycle commuting less convenient and reduces its ability to become a strong habit.

So far, I have demonstrated that poor bikeway infrastructure is a constraint for the recruitment and retainment of carriers because of the negative impacts on time-efficiency, safety, convenience and comfort. It also increases the levels of skills and competence required for the performance of bicycle commuting. Some informants use their skills to maximise the competitiveness of bicycle commuting by bending and breaking traffic rules. Rule-breaking behaviours potentially increase the level of conflict among traffic groups, causing further constraints for cycling practices. Furthermore, poor infrastructure influences the cultural meanings of the practice, causing additional constraints to the practice. A discussion of the cultural significance of the practice is presented under the subheading *Missing links to normality* later in this chapter.

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<sup>15</sup> In English: "The bicycle patrol" .



Although bikeway infrastructure stands out as a critical material element of bicycle commuting practices, there is a range of other material objects that influence the practice. Many of the informants made use of parking and other facilities at work when they commuted. To the car commuting informants in my study, access to parking facilities both at home and at work was essential. Some of the bicycle commuters identified safe bicycle parking and shower facilities at work as vital to their commuting practices, while others placed less importance to the presence of such facilities. How important these facilities were for bicycle commuting depended on the other elements of a specific commute, such as the distance and topography, the type of bicycle being used, physical features of the practitioner and his or her purpose of bicycle commuting, along with personal conceptions of comfort and convenience. The ways in which these elements influenced the demand for parking and other facilities among bicycle commuters is described in the following.

Most of the informants in my study who bicycle commuted had access to bicycle parking at work. Some of them parked their bicycles in a locked cage in the garage, others in bicycle racks outside. Bicycle parking facilities were not mentioned by any of the informants as a main reason for choosing to bicycle commute or not, but the presence or absence of such facilities affected the level of convenience and comfort of bicycle commuting. The informants who worried about bicycle thefts placed heavy importance on safe parking facilities, like Abdul, who wanted to bicycle commute, but found it too inconvenient and uncomfortable: “I’ve been so worried [about theft] that I’ve brought it [the bicycle] with me up into the office (...) But that makes bicycle commuting more of a hassle”, he explained. Year-round bicycle commuter Karsten, on the other hand, was very pleased with the parking facilities at his work place: “We have secure, indoor parking, so I don’t even lock my bicycle. It’s safe and dry, which is very convenient”. The facilities informants have access to at work and at home also influenced their bicycle ownership, which

again affect their commuting practices. The fact that the bicycle garage at Karsten's home residence was situated at the bottom of a staircase prevented, along with the risk of bicycle theft, his family from acquiring an expensive, electric cargo bicycle. "We didn't risk parking it outside, and it would have been a bit too long and heavy to roll down the staircase. So we've dropped the idea", he said.

The informants who regarded exercise as the main motivation to bicycle commute put on special bicycle wear and depended on showering at work. To them, shower facilities at work were just as important, or more, as safe parking. Baard was one of them:

*Shower facilities are crucial, because I don't cycle in a way that allows me to wear ordinary clothes. I need to wear a fitness outfit and take a shower before I start working. So it [shower facilities] is absolutely necessary.*

As Baard points out, shower facilities were important to him because of the way he bicycle commuted. When asked whether he would have given up bicycle commuting had these facilities been removed, Baard replied: "I guess I would have continued to cycle, but it wouldn't have been the same. If I'm to avoid breaking a sweat I have to cycle much slower, which would have been a bit boring". Other bicycle-commuting informants regarded safe parking and shower facilities to be irrelevant to them. "The ones who have expensive bicycles park inside, and the ones who commute long distances use the showers", Giselle commented, before stating that she would rather use public transport than commute by bicycle if she had to shower at work. "Too much hassle", she explained. Giselle was among the informants who regarded exercise as a positive side-effect to bicycle commuting, but not the main reason. This group of informants commuted in ordinary clothes and tried to avoid breaking a sweat.

In the same way parking and shower facilities can work as enablers to bicycle commuting, parking facilities for cars enable car commuting, and thus constrain other types of commuting practices. A Norwegian study shows that people with free access to car parking at work make 36 percent fewer bicycle trips than other people (Ellis, Nesse, and Norheim 2012). Access to parking facilities made car commuting very convenient and comfortable to the informants Kristine and Henrik. To illustrate this point, I repeat Kristine's justification of car commuting from the subchapter *Convenience and comfort*: "It's comfortable [to drive]. I have a garage in the basement at home and a garage in the basement at work, so I don't have to mind the weather, I never get wet". While she had to pay 20 NOK per day to park at work, Henrik had access to free parking. And even though he sometimes had to wait until the previous work shift ended to find space to park, and struggled to find available street parking close to his apartment, he preferred to car commute during winter. Without car parking facilities at work Henrik would have commuted by bus instead: "I'd be forced to do it [commute by bus], at least in winter. Street parking costs 40 NOK an hour, which is out of the question [to pay]", he said.

Before heading on to discuss the significance of bicycle thefts, I provide the readers with a repetition of the main findings in the chapter up till now. Much of the evidence presented above indicates that bikeway infrastructure is a great constraint to bicycle commuting. A related aspect is the traffic regulations, which, according to many of the informants, are designed for car driving and not cycling and thereby reduce the convenience and time-efficiency of bicycle commuting. Some of the informants regarded poor infrastructure as a constraint primarily because it reduces the convenience of cycling and increases time-use, and employ time-saving techniques in traffic, such as breaking traffic regulations. The majority of the informants, both the ones who bicycle commute and the ones who don't, regard the biggest problem with

poor infrastructure to be its negative impact on safety. All of the informants regard cycling in Oslo unsafe, a finding that corresponds with earlier studies of the subject. Some of them are willing to live with the risk, but take precautionary measures, such as cycle on the sidewalk, take detours, only cycle in summer, make up their own traffic rules, and wear safety gear. Some of the measures make bicycle commuting more cumbersome, other measures make the informants bicycle commute less frequently. Some informants acknowledge the risk without taking many precautions to minimise it, while others are not willing to take the risk at all, and thereby avoid commuting by bicycle. Poor bikeway infrastructure also makes bicycle commuting a skill-demanding practice, which works as an additional constraint to the practice. Because of its poor standard and bad reputation, the bikeway infrastructure causes cycling practices in Oslo to be associated with risk and danger, inhibiting the recruitment of new carriers. The infrastructure also affects the cohort of carriers, which again has implications for the cultural meanings connected to the practice. This subject is treated more extensively later in the chapter.

The significance of shower facilities for bicycle commuting among the informants depended on the distance and purpose of their commute, features of the commute route and informants' way of commuting. To bicycle commuters whose main purpose of bicycle commuting was to get exercise, commute in a way that made them sweat, which caused a demand for shower facilities. Safe parking facilities were more important to the bicycle commuters who had expensive bicycles than the informants with old and/or cheap bicycles, and were regarded as more important in areas frequently exposed to bicycle theft. In general, the lack of shower facilities at work and proper parking facilities at home and at work are constraints to bicycle commuting. Bicycle thefts have so far been mentioned sporadically in relation

to safe parking facilities and bicycle ownership. In the next subsection I examine the ways bicycle thefts constrain bicycle commuting in Oslo.

## Bicycle thefts

During the interviews the informants were encouraged to reflect upon constraints to bicycle commuting for them personally, but also upon what they regarded as barriers to cycling practices in Oslo in general. Along with poor infrastructure, bicycle thefts were mentioned as one of the biggest constraints to cycling, especially in the city centre. According to the empirical findings from the interviews, bicycle thefts pose a constraint to bicycle commuting for one or several of the following reasons:

- Thefts deprive people of their bicycles – the most fundamental material element of bicycle commuting. Two of the informants who usually commuted by bicycle had gotten their bicycles stolen prior to the interviews, and were at the time commuting in other ways.
- The risk of bicycle theft represents a massive disincentive for bicycle ownership. Some informants chose to not have a bicycle, while others settled for bicycles of poor quality, or used the city bike scheme instead of owning a bicycle.
- The risk of theft also limits bicycle use in several ways. Among the informants, use was restricted by the first two reasons, but also by the fact that some of them refrained from parking their bicycles in certain areas of the city.
- When people are deprived of their bicycles, they are forced to change their commuting routines for a certain period of time, which can result in a permanent switch of routines.

The next few pages elaborate on these four main constraints posed by bicycle thefts.

Almost all of the informants had at one point gotten their bicycle stolen in Oslo, some of them several times. Being the victim of a bicycle theft was described as a very disturbing experience. “It was almost a shock to me. (...) I’m always careful about locking it, and I thought I had a good lock”, Lillian said. Being subjected to a bicycle theft was, according to the informants, a strong impediment for bicycle ownership. According to a user survey among Oslo citizens, 42 percent cycle less than they would like to because of bicycle thefts (Oslo kommune 2006). “How big an incentive is there to be like ‘Okay, I’ll just buy a new one’?”, Abdul said. The risk of theft was one of the reasons Anna stated for not buying a bicycle:

*I haven’t been super excited about buying a new bicycle here in Oslo, because they all get stolen. I’ve been to some flea markets to look for bicycles, but they’re sold out immediately, since everyone wants old bikes that no one bothers to steal.*

Many of the other informants shared Anna’s thoughts on owning a new and/or expensive bicycle in Oslo. Marianne was one of the few informants who still hadn’t been subjected to bicycle theft, which, according to her, was no coincidence: “A few years ago my mother wanted to give me a new bicycle. (...) I said no, because I didn’t want to be afraid of parking it anywhere”. Angelica covered her electric bicycle with silly stickers to make it less attractive to thieves, and she never left it without taking the battery with her:

*I don’t trust Oslo. Even here [at home] people rummage every night, stealing bicycles. They come with giant pliers. You should see the shackle I use to lock my bicycle with, two shackles.*

One of the most dedicated bicycle commuters, Karsten, took precautions by using two locks and being restrictive of where he parked his bicycles: “I would never park at Oslo central station to take the train somewhere, that’s for

sure (...) even if it was a cheap bicycle. (...) I often take the metro to go to the cinema and stuff”, he said. Several of the informants who owned expensive bicycles also had an old one to use when going places without safe parking facilities, especially in the city centre. One of them was Baard, who had been robbed of two bicycles in the past:

*I take precautions by using a wreck of a bicycle when I'm going downtown, and having an expensive lock. I think the lock almost costs more than the bicycle.*

Eivind also avoided using and parking his bicycle in the city centre: “It’s guaranteed to get stolen. I only do it if it’s to pop into a shop for a few minutes”. Eivind and Baard both lived outside the city centre with safe parking facilities at work, which meant that their fear of bicycle theft did not keep them from bicycle commuting on relatively expensive, good-quality bicycles.

Kristine, a car commuter rationalizing her choice of transport mode from a time-saving perspective, told me that a viable commuting option for her could have been to cycle to the nearest metro station, park the bicycle, and take the metro. But she had come to the conclusion that this was a bad idea: “Then I’d first have to buy an old bicycle, because the one that I have now, with all the equipment, would get tampered with even before I entered the metro”, she said. To some of the informants, subscribing to the city bicycle scheme was a way of avoiding being subjected to bicycle thefts. Other informants had a desire to acquire a certain type of bicycle to be able to bicycle commute more often, but were reluctant to do so because they were afraid of thefts. One of them was Vilde, who wanted to buy a folding bicycle to be able to bring it with her for free on public transport:

*One of the main reasons why I haven't bought it yet is because it's expensive, it costs about 10 000 NOK, and I'm afraid it'll get nicked. No one is bothered to steal the one I have now. (...) I don't like to have things I have to worry about.*

In this subchapter, I have described the ways in which the informants regarded bicycle thefts as a major constraint to cycling practices in Oslo. Some of them saw it as a reason in itself to not acquire a bicycle, while others reduced the risk of theft by using worthless bicycles, several locks, or simply avoided cycling or parking in certain areas of the city. Even though bicycle thefts were identified as a constraint to cycling practices in general, it was not necessarily regarded as a constraint for bicycle commuting. The latter depended on the risk of bicycle theft at the informant's home and place of work, which again depended on parking facilities and location. But, of course, a general constraint to other cycling practices also works as a constraint to bicycle commuting, since these practices are bundled together and share many of the same elements. The risk of bicycle theft is affecting cycling practices and bicycle commuting in various ways, not just being a disincentive to owning a bicycle, but also keeping people from acquiring certain types of bicycles or bicycle accessory, which again affects cycling practices. The fact that some parts of the city are regarded as high risk areas for bicycle thefts is an additional constraint for cycling practices, since people avoid to park in these areas. As I have demonstrated in relation to other constraints; the willingness to employ strategies to overcome, or to simply live with, the risk of bicycle thefts depended on how convenient and comfortable the informants considered cycling and bicycle commuting to be. Anna and Marianne, who both regarded bicycle thefts to be a big problem in Oslo, demonstrate this difference. While Anna saw the risk of bicycle theft as one of many reasons to not acquire a bicycle and start bicycle commuting, Marianne managed the risk by having a cheap and old bicycle. The different expectations and management strategies



between the two women can also be recognized on a societal level. After one year as a resident in Copenhagen and 3.5 years in Oslo, I have discovered what appears to be a notable difference in the conceptualization of bicycle thefts in the two cities, which provides a useful perspective on the findings in this study. In 2013, the reported number of stolen bicycles in Oslo was 3 970 (Johansen 2013). Comparably, almost 20 000 bicycles were reported stolen in Copenhagen the same year (Danmarks statistik 2013). This means that one bicycle was reported stolen for every 34 inhabitants in Copenhagen, and one bicycle for every 160 inhabitants in Oslo (Danmarks statistik 2014, Statistisk Sentralbyrå 2014). Since a lower share of the population in Oslo cycle on a daily basis, fewer people are subjected to these thefts, but the main point is that being the victim of a bicycle theft in Copenhagen is very common. Nevertheless, expectations around bicycle thefts appear to represent a bigger constraint to cycling practices in Oslo than in Copenhagen. Based on the high, and increasing<sup>16</sup>, bicycle modal share among in the latter, it seems to take more than a bicycle theft to keep people in Copenhagen from cycling. The major difference between Oslo and Copenhagen is massive amount of enablers to bicycle commuting in the latter, which makes the incentive to acquire a new bicycle when the old one gets stolen much higher than in Oslo, where the constraints to cycling are many. To quote Anna's response when I asked what it would take for her to start bicycle commuting: "It must be more pleasure than aggravation. If the aggravation supersedes the pleasure, I would end up straight back on the metro". The informants were generally willing to accept negative aspects of something, if the benefits were perceived as larger. This implies that one particular constraint to cycling practices, such as bicycle thefts in this case, can be (partly) removed by eliminating other constraints to the practice.

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<sup>16</sup> Bicycle modal share for commuting in Copenhagen in 2013: 36 percent (Københavns kommune 2014).

In the following section, I elaborate on the constraints to bicycle commuting posed by contextual elements.

## Distance, weather and topography

Contextual issues such as distance, climate and topography play an important role for commuting practices, affecting the time-use, convenience and comfort of a commute. Being a physical activity performed outdoors, bicycle commuting is a practice highly dependent on the context it is performed in. A relatively large amount of quantitative research show that geographical factors influence cycling levels. The studies mentioned here only represent a few examples of Norwegian studies. Distance is the most determining for whether or not people cycle, followed by hilliness (Tretvik 2008, Ellis, Nesse, and Norheim 2012). 80 percent of bicycle trips in Norway are shorter than 5 kilometres, and only 3 percent are longer than 20 kilometres (Lea, Haug, and Selvig 2012, 50). A travel survey shows that Søndre Nordstrand, a hilly city district in Oslo situated far away from the city centre, has a bicycle modal share of only two percent, while the relatively flat and centrally located districts Grünerløkka, St. Hanshaugen and Frogner have bicycle modal shares of 14-15 percent. The variation in bicycle modal share across the city districts seems partly to reflect aspects of location and topography. Then again, Nordre Aker, a district quite comparable to Søndre Nordstrand when it comes to topography and distance to the city centre, has a bicycle share of 12 percent, indicating the significance of other elements, such as infrastructure and culturally constructed meanings (dealt with in other subchapters) (Kummel and Nordström 2013b)<sup>17</sup>. A study of outdoor temperature data in Norway indicate that the levels of cycling increases with rising temperatures (Engebretsen and Voll 2011). In 2009, the average bicycle modal share in

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<sup>17</sup> Even though the dataset in the study is a small when divided into districts, it gives a certain indication of the prevalence of cycling practices in Oslo.

Norway went up from 1 percent in January, February and March, to between 5 and 8 percent from April to October (Liva, Brechan, and Hjorthol 2011). Nevertheless, having a Nordic climate with a relatively cold and long winter is not a contextual factor that alone can explain low bicycle modal shares in Norwegian cities. Copenhagen, where 36 percent of all commuters cycle, had an average temperature only 1.5 degrees Celsius higher than Oslo in the years 1961 and 1990 (Københavns kommune 2013, Lea, Haug, and Selvig 2012, 55). 80 percent of the inhabitants in Copenhagen continue to cycle during winter (Colville-Andersen 2011). Umeå, a Swedish city on the same latitude as Verdal in Norway, has a bicycle modal share of 22 percent (Lea, Haug, and Selvig 2012, 26).

Unsurprisingly, the informants in my study pointed to the same contextual constraints to bicycle commuting as those identified by quantitative studies. As previously mentioned in the subchapter *Time and space*, Abdul tried to bicycle commute a few times but found the distance too long and the climb too steep: “I got too lazy for it. It wasn’t that hard, it was just easier another way”, he explained. However, what were acceptable and unacceptable conditions and distances for cycling varied enormously among the informants. A few examples: Angelica was willing to commute a roundtrip of 32 kilometres by bicycle, as she did several times a week. Baard wished his bicycle commute was twice as long (32 kilometres instead of 16) in order to get more exercise. The bus-commuting informant Olav considered an 8 kilometre roundtrip to be about the maximum distance he would be willing to commute by bicycle. Lillian and Vilde couldn’t be bothered to cycle in winter or when it was raining, while Geir had a lower temperature limit of around -10 degrees Celsius for bicycle commuting.

I found the differences in the informants’ willingness to employ strategies to alleviate constraints caused by contextual factors to be highly interesting. The

chapter *Why people commute the way they do* describes how the coordination and management of everyday life in regards to time, timing and space influence the informants' commuting practices. The informants commuted in ways that were comfortable and convenient for them, which depended largely on their life situation, and material objects and infrastructure available. Participation in a practice is also influenced by personal values, knowledge, tastes and preferences, which are the result of internalised social structures. The different levels of acceptance when it comes to contextual issues such as distance and weather must be interpreted in light of all the other constraints of bicycle commuting to each individual informant. Similar to other constraints, the willingness to make an effort to overcome such contextual constraints to bicycle commuting depended on how convenient and comfortable bicycle commuting was perceived to be compared to the other options, including the difference in time-use between the modes of transport available. Angelica, who loved to cycle, had bought an electric bicycle to be able to bicycle commute 32 kilometres. Informants who commuted by bicycle during winter wore warm clothes, switched to studded tyres and mounted lights on their bicycles. "Many think I'm so tough for cycling in the winter (...) they're the ones that haven't discovered that it's just as easy to cycle in the winter as it is in summer", Pål commented. Vilde was well aware of the existence of such strategies, but she was not willing to employ them:

*To ride a bicycle on ice sounds terrifying. Or, I can understand it if you have studded tyres. I've never tried that. Maybe it works just fine. But it's cold and... I don't know. I just don't even think of it as an option.*

She also regarded bad weather as one of the many constraints to bicycle commuting, and avoided cycling in the rain: "The straw that broke the camel's back... It's like that, really", Vilde said. Angelica, Pål and Vilde exemplifies

the following point: Informants who saw bicycle commuting as the most convenient and comfortable, like Pål, did not seem to mind rain, cold or long distances as much, or were more willing to make adjustments to manage these challenges than informants who had a number of other motives not to bicycle commute. To the latter group, the contextual issues just added to the pool of reasons for commuting in other ways.

As already mentioned; practices performed in uniform environments tend to become stronger habits than practices performed in complex and changing environments (Wilhite 2012). Since bicycle commuting is an outdoor activity, the performance of the practice is exposed to changing weather conditions, which alters the demands for materials and competence on a day-to-day and seasonal basis, thereby weakening the potential for the practice to become strongly habituated. The informants who bicycle commuted irregularly employed reflexive decision-making on the basis of the changing weather conditions to a larger extent than informants who commuted in other ways. The informants who always bicycle commuted used a range of material artefacts, such as rain suits and studded tyres, to manage the changing conditions. This relatively high demand for material objects to manage challenges presented by the weather and climate is another constraint for the performance of bicycle commuting, especially in the winter.

In this subchapter, I have presented evidence to the argument that contextual issues matter to the performance of and recruitment to bicycle commuting. Long distances, bad weather, winter and hilliness constrain bicycle commuting in various ways. However, the informants' notions and expectations of how these issues affected time-use, comfort, convenience and safety led to the employment of different managing strategies, and their readiness to manage constraints posed by contextual elements depended on how convenient and

comfortable they regarded bicycle commuting to be compared to the alternatives.

In the next subchapter, I discuss how economic entanglements with other transport modes affect bicycle commuting.

## Economic entanglements

Economic costs and benefits were not a prominent part of the informants' rationalization of their own commuting routines, and none of the bicycle-commuting informants mentioned economic benefits as a main reason for cycling. Some of them called it 'a nice bonus', while others said that bicycle commuting was as an excuse to buy expensive bicycles or bicycle equipment, and so they didn't really save a lot of money doing it. Several studies show a positive correlation in Oslo between a household's income and its access to bicycles, and also between a household's access to bicycles and its access to cars, and bicycle use and car access (Kummel and Nordström 2013b, Tretvik 2011, 2010). The bicycle modal share in 'wealthy' city districts, such as Frogner and Nordre Aker, is higher than the city average (Kummel and Nordström 2013b). In a multiple answer survey among people who cycle in Oslo and Akershus, people were asked about their main reasons for cycling. 'Cheap' was the 5<sup>th</sup> most selected reason after 'exercise', 'convenience', 'fresh air' and 'saving time' (Haugberg 2009). These studies imply that although saving money can be a motivation to commute by bicycle, to most people in Oslo it's no key argument for owning and using a bicycle.

Although financial costs and benefits seemed less significant for the informants' commuting routines, economic investments were mentioned as constraints to bicycle commuting. The most pronounced constraint was the 30-day public transport ticket. The convenience of buying a 30-day ticket was partly justified in terms of economic rationality, and kept several of the

informants from commuting in other ways. Vilde expressed concerns about the environment, and would have liked to commute by bicycle more often, but she usually found it more convenient and comfortable to use public transportation. The financial investment of a 30-day ticket tipped the scale in favour of the latter:

*It's not the commute to work so much as the additional bonuses; it doesn't cost anything extra to take the metro up to Marka<sup>18</sup> in the weekends and stuff. (...) It's extremely easy to take the metro or the tram, and you easily end up not walking or cycling.*

Anna used to cycle all the time when she lived in Bergen. When she moved to Oslo, she started buying 30-day tickets on a student discount. She stopped cycling, and gave away her bicycle. Anna had thought about buying a new bicycle, but hadn't gotten around to it yet. She claimed that the 30-day ticket was the main reason for not cycling in Oslo, and for not having bought a new bicycle:

*I guess I haven't missed cycling enough. But the main reason is the 30-day ticket, which allows me to go where I want. Now I think it's a bit too far to walk both ways to work, and then it pays off to buy it.*

Buying 30-day tickets also made Abdul drive and cycle less than he otherwise would have:

*On the one hand it's good, because it often makes me take the bus instead of the car. On the other hand, it means that I also take the bus the days I could have cycled.*

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<sup>18</sup> 'Marka' is short for 'Oslomarka', which is the name of the forested areas around the city of Oslo.

When Marianne lived closer to the city centre, she purposely avoided buying 30-day tickets during the summer season:

*I did it to give myself an additional reason to cycle. Having to pay for each metro trip works as a disincentive compared to the 30-day ticket, which allows you to simply jump on.*

Like Anna, Marianne enjoyed the prerogative of a student discount on the 30-day tickets, which, according to her, was an incentive to keep buying them. “I get a student discount until I turn 30. So I’m thinking of buying them now, and limit the use when I have to pay full price”, she said. Refraining from buying 30-day tickets was a part of Mari’s explanation for a sudden change in her commuting routines. “I started cycling during a summer when I, for some reason, didn’t have a 30-day ticket. And then cycling became a habit”, she said. A similar economic entanglement was the investment of a car in the household. Martin, a 34 year-old, soon-to-be father of two children, explained that many of his friends had stopped cycling and started driving after becoming parents:

*They are in the same situation as me; they’ve had children and replaced the bike with a car as their primary mode of transport. And the cost of owning a car is so high that the additional cost of driving it is not that big.*

The findings in this subchapter shows that although the informants’ commuting routines were mainly rationalised in other terms than financial, saving money was seen as a benefit to bicycle commuting by most of the informants. Investing in a 30-day ticket for public transport was mainly done for reasons of convenience and to save money, and the investment constrained bicycle commuting in several ways, a mechanism that might also apply to car ownership.



In the final section of the chapter *Constraints to bicycle commuting*, I examine the constraints to bicycle commuting in Oslo posed by cultural meanings and social connections.

## Missing links to normality

Up till now, the analysis has dealt with how a variety of infrastructural, material and contextual elements affect bicycle commuting in Oslo. In this chapter, I discuss the cultural meanings of bicycle commuting, along with social connections and conventions. I argue that the meanings associated with bicycle commuting in Oslo constrain the recruitment of carriers to the practice in numerous ways.

According to Shove, Pantzar, and Watson (2012, 153) the cultural significance of cycling “depends on how riding is positioned within and by an interdependent network of social and material arrangements”. Its significance is highly contingent on the socio-cultural context, and changes over time, with alterations in the elements, the configuration of the elements, the cohort of carriers and changes in the socio-cultural context itself. The de- and re-classification of the meanings of practices have a historical aspect, they are the results of “past patterns of persistence, transformation and disappearance” (Shove, Pantzar, and Watson 2012, 64). Each time the practice is performed, the elements are configured, creating stability, or reconfigured, creating change. It is a complex and continuous process where cause and effect is difficult, if not impossible, to pinpoint.

For a practice like bicycle commuting to be considered normal in a community, it requires constant reproduction and a certain penetration rate in the population (Shove 2010, 1279). Some practices become so established and normalised in a society that they become culturally invisible, in the sense that the performance of them is taken for granted, and the meanings of the

practices are not linked to ideology, lifestyle or fashion (Aldred and Jungnickel 2014, 85). Vacuum-cleaning and showering are two examples of such culturally invisible practices in the Norwegian society. The cultural significance of bicycle commuting in Oslo, and its influence on the recruitment of new carriers, depends largely on elements previously discussed. As described in the introductory chapter, the first bicycles, the velocipedes, were used by young and wealthy males for the purpose of excitement and enjoyment. Later, bicycles became normal and necessary tools for transportation (Nielsen 2010, Røsåsen 2014). There are many such examples, in which novel devices regarded as toys become redefined as normal necessities when they are embedded in society with an established purpose (Pantzar 2003). Shove argues that the process of redefining novelties from toys to necessities also works in reverse, referring to the trajectory of cycling in the UK. “Having been disassociated from ordinary commuting and daily use, bicycles have been re-associated with more specialist forms of sport and leisure”, she writes (2012, 368). The findings in my study imply that cycling in Oslo has had a similar trajectory, and is today more connected to meanings of leisure, sports, exercise and lifestyle than to meanings of necessity and normality, just as it was in the beginning of the 20<sup>th</sup> century (Haugberg 2009). Norwegians exercise more than ever before, and cycling has become the most popular form of exercising, beating the traditional Nordic sport cross-country skiing (Statistisk Sentralbyrå 2013b). Cycling competitions, such as Birkebeinerrittet, have in the recent years been fully booked within a few hours (Nynorsk Pressekontor 2013). Professional Norwegian cyclists, such as Thor Hushovd, Kurt Asle Arvesen and Edvald Boasson Hagen, have contributed to increasing the national interest in road cycling. Each summer several hundred thousand Norwegians watch Tour de France on television (Jerijervi 2012).

Among the 14 informants who bicycle commuted regularly or occasionally, three regarded physical exercise as the most important reason for bicycle commuting. The rest considered it a significant and positive side effect. In a survey among 2 400 Oslo residents, exercise/fitness/health was the most frequently mentioned motivation for cycling practices of all kinds. This motivation was more pronounced among the age group 45-59 years, and people with a high education level and access to car(s), which implies that cycling practices in these groups are not performed merely out of convenience or necessity (Tretvik 2011). Cycling is strongly associated with exercise and fitness across all age groups and education levels: 96 percent of the respondents in another Oslo survey agree with the assertion that cycling promotes good health (Kummel and Nordström 2013a). With several hundred kilometres of roads and paths through the vast forests surrounding the capital, Oslo is regarded a paradise for off-road and mountain biking enthusiasts, and during the summer season the number of cyclists some places outnumber the amount of hikers (Røeggen 2008). An observation study found that 58 percent of people cycling in Oslo dress in sportswear (Kummel and Nordström 2013b). This applied to four of the bicycle-commuting informants in my study. One of the informants who commuted by bus, Olav, perceived bicycle commuting in Oslo, especially in winter, to be the outcome of exercise addiction: “It has to be a fitness thing when it’s slushy and dark outside and [they are] riding with studded tyres on icy roads...”, he said. To him, bicycle commuting in winter was clearly more about pursuing a specific lifestyle than making use of an “effective tool that makes our everyday lives easier”, to quote urban designer Colville-Andersen (2013) on the Copenhageners’ view of the bicycle.

When it comes to bicycle commuting in Oslo, there is a dichotomy in the perception of health benefits involved, originating from the conditions for cycling and the benefits of physical activity. Recent research shows that

cycling in urban environments has considerable health benefits, even when the negative effects of breathing polluted air and the risk of getting injured is taken into account (Woodcock et al. 2014). This statistical fact does not seem to influence the general opinion on cycling and safety in Oslo. Cycling was the only transport mode that was mentioned by the informants as a threat to people's health through the risk of accidents. An inquiry from 2013 shows that 68 percent of car drivers in Oslo perceive cycling in Oslo as unsafe. Among those who cycle, 63 percent find it unsafe. In Trondheim, a city with a higher bicycle modal share, 33 percent of car drivers and 29 percent of cyclists find it unsafe to cycle in the city (Sandberg 2013). When the majority of residents regard cycling in Oslo as unsafe because of inadequate bikeway infrastructure, bicycle commuting becomes linked to cultural meanings of risk and danger. During an interview in 2013, the former general secretary of the Norwegian cyclist union SLF, Rune Gjøs, stated that he was tired of hearing people talk about the dangerousness of cycling in Oslo: "Of course, we need safe bicycle roads. But there are in fact many safe bicycle roads in place already. (...) I think we're at a point where we need to reconsider our own attitudes", he said (Holøien 2013). Gjøs' statement provides an interesting perspective on the constraints that material infrastructure poses to cycling practices in Oslo. If cycling is regarded as disproportionately unsafe and harmful to health compared to other transport modes, it amplifies the discouraging effect that poor infrastructure has on the recruitment of carriers, and makes bicycle commuting an activity primarily for 'the bold and brave' – just as it was before the invention of the safety bicycle. This skewed cohort of carriers, and the ways they perform the practice, again influence the meanings linked to the practice. Informant Eivind pointed to what he saw as an implication of the link between bicycle commuting and danger: "[Most people see it as] an extreme sport that some participate in. [It's] not relevant [for them], it's something others do". Abdul made a similar observation: "Cycling in Oslo is not for most

people”, he said. The infrastructure attracts much negative media attention on the conditions for cycling in the city, which may reinforce the deterring effect the infrastructure has on potential practitioners. Heavy media coverage of traffic accidents involving cyclists is also likely to contribute to creating a structural story of cycling in Oslo as an extremely dangerous activity compared to other forms of transportation.

In addition to being regarded as a dangerous activity, and linked to meanings of fitness and exercise, there are many other indications of the cultural *visibility* and *abnormality* of bicycle commuting in Oslo – especially during winter. Articles and courses on “how to become a winter cyclist” or “how to prepare your bicycle for winter” indicate that this type of knowledge and competence is not taken for granted in the Norwegian society (e.g. Risberg 2014, Kristiansen 2014). Newspaper comments on the oddity of bicycle commuting during winter are not uncommon, like the one by Ramnefjell (2014), stating “cycling is not, and will never be, a year-round activity for normal people in a land with snow and ice five months a year”. Karsten was one of the informants who had personal experiences of the consequences of the cultural visibility of cycling. He used the bicycle for practically everything: Commuting, shopping, visiting friends, etc., and was regularly met with prejudice and a lack of understanding for his routines: “You hear so many weird things, and some people look down on you for cycling. ‘Why don’t you drive a car like a normal person?’”, Karsten said, quoting people he had met. Giselle imitated her colleagues, saying ““You’re completely crazy for cycling in 20 degrees below zero””. Baard, another year-round bicycle commuter, had similar social experiences:

*People think it’s a bit weird that I bother cycling in freezing temperatures. [My car commuting colleagues] don’t comment on it, they just look at me in a funny way when I arrive at work*

*in full winter gear, with a cap under the helmet and thick mittens.*

Karsten had also experienced being associated with a specific group or being projected having specific values and interests, because of his cycling practices:

*You often get labelled 'environment activist' for cycling, but that has never been an important argument for me. It's not like I have an environmental conscience making me bike commute.*

In the article “Why Culture Matters for Transport Policy: The Case of Cycling in the UK”, Aldred and Jungnickel (2014) claim that cycling practices are reinforced and re-made through meanings that encourage carriers to both think and feel in specific ways. These connections of meanings have been made through performances and knowledge of the practice, and have implications for the recruitment of carriers and future performances, which again influence the meanings of the practice. Comparing UK cities with high and low cycling shares, they discovered that in the same way links to meanings of ‘normality’ depend on the position of a practice in a community, the linkages between practices and ‘convenience’ are culturally dependent. In the working-class city Hull, where cycling levels are low, cycling was constructed as being about lack of choice, whereas in the affluent university city Cambridge, where cycling levels are high, cycling was taken for granted and seen as a rational and purposive choice (Aldred and Jungnickel 2014, 83).

Today, the majority of bicycle commuters in Oslo are wealthy and well-educated men in their forties. My findings do not indicate that bicycle commuting in Oslo is constructed as being about lack of choice, as it was in Hull. Rather, it is constructed as a practice based on lifestyle, interests, values or other characteristics of the carriers, such as being fit and fearless. The cohort of carriers links the practice to some form of ‘conspicuous leisure’

based on gender, lifestyle and socio-economic status, instead of meanings of convenience, comfort and normality (Veblen 1965). Similar findings have been made in the UK and USA (Horton 2006; Blickstein and Hanson 2001; cited in Shove 2012, 368, Aldred 2010). To the extent that bicycle commuting in Oslo is detached from meanings of convenience and normality, its cultural significance works as a constraint for recruiting new carriers. When bicycle commuting is linked with exercise and fitness instead of convenience and comfort, people that do not consider themselves to be sporty, or have a wish to become fit and healthy, might disregard bicycle commuting as relevant to them, and not bother to check whether cycling in fact is the most convenient, time-efficient and comfortable commuting option. The same goes for the linkages to certain characteristics, values and interests of the carriers. For bicycle commuting to attract more carriers, it needs to be perceived as the outcome of rational decision-making based on time, convenience and comfort, and not the result of an exercise addiction, specific moral values, political interests or lifestyle. Aldred and Jungnickel (2014) argue that when a practice becomes widespread in a population, it loses its position as an identity marker by becoming less associated with a certain group affiliation for the individual carrier. Bicycle commuting in Copenhagen illustrate this point: The practice is so widespread that participation does not indicate membership of one or another social group, nor are such networks relevant for its diffusion.

How cultural perceptions of bicycle commuting can work as constraints for recruiting new practitioners is exemplified through the views of the car commuting informant Henrik, who hasn't used a bicycle for transportation reasons since he was a child. Despite having a short and flat commute, his idea of bicycle commuting involved sportswear, perspiration, and substantial physical effort:

*I would have to wear different clothes if I were to cycle to work.  
(...) we wear uniforms. To cycle in uniform and stuff, that's...  
and the uniform is not exactly made for cycling either... a bit  
uncomfortable. (...) then I might have to change if I get sweaty.*

Henrik's statement illuminates the links between bicycle commuting, fitness and clothing conventions. Clothing practices are much more than comfort strategies, they are intimately connected to socio-cultural expectations, with the fashion industry as an important provider (Chappels and Shove 2004, 22). As already mentioned, near 6 out of 10 observed people cycling in the city of Oslo use sportswear (Kummel and Nordström 2013b). Some of the informants admitted using specific bicycles or bicycle gear as identity markers, what Veblen (1965) refers to as 'conspicuous consumption'. Lillian was one of four bicycle-commuting informants who always dressed in sportswear when cycling to work, even though her route was quite flat and she didn't take a shower afterwards. When Lillian was asked about why she put on sportswear, she exposed the agency in socio-cultural norms and expectations:

*I don't really know. Maybe I feel like I'm stepping into a role as a cyclist. I feel more comfortable about wearing a helmet when I'm in my bike wear than when I have regular clothes on. I often feel a bit stupid when I'm in my everyday outfit and put on a helmet, like they don't go together. So I guess that's why, I get in a different mode so to speak.*

Some of the informants regarded their personal clothing preferences and cultural conventions as constraints to bicycle commuting. When Anna moved from Bergen to Oslo she went from commuting by bicycle every day to the university to hardly using the bicycle as a mode of transport at all. Among the many reasons she gave for this change in commuting routine, clothing was one:



*I often wear skirts and dresses, and my old bike was bought at a time where (...) all girls were supposed to have men's bikes with a straight rod, because that was the coolest, and so it was quite impractical (...) I don't like showing my butt to half the city, and I feel that that's something you would do on a bicycle in a skirt or a dress. So I would have to buy a more skirt-friendly woman's bike (...) But it's a vanity thing (...) And that might have changed a bit from when I lived in Bergen (...) there it was more socially accepted to wear a rain suit everywhere, because you had to, since it was raining all the time. But here in Oslo it doesn't rain as much, and you can wear other types of clothes and shoes that are less bicycle-friendly.*

In traditional cycling cities such as Amsterdam and Copenhagen, most people commuting by bicycle do not dress differently from others. The bicycle fashion blog Copenhagen Cycle Chic is filled with pictures of cycling women in smart clothes and short skirts, demonstrating that wearing feminine clothes is not perceived as incompatible with riding a bicycle (Copenhagenize Design Co. 2014). In Oslo, on the other hand, where cycling is less mundane and to a larger extent connected with ideas of sports and exercise, many people put on special clothes and gear for cycling. Watson (2012, 495) has found growing evidence of innovation niches in cycling practices in London, innovations that relate to technology, meanings, purposes and competence. He mentions cycling sub-cultures around fixed bicycles and the emergence of the conspicuous elegance 'velo-chic' fashion as examples, fuelled by specialist shops that import bicycles and accessories from countries such as Denmark and the Netherlands. The start of a similar trend can be observed in certain parts of Oslo, such as the 'young and hip' city districts Grünerløkka and St. Hanshaugen. The barber, fashion and bicycle shop *Dapper* at Grünerløkka and the web shop *Sykkelpikene.no* are two examples of relatively new, Norwegian

commercial actors servicing and propagating a ‘velo-chic’ fashion trend inspired by cities such as Copenhagen. A contextual factor that needs to be taken into account in Oslo is the landscape, which is more physically challenging for cycling than the almost completely flat cities of Amsterdam and Copenhagen. The material requirements for cycling are therefore somewhat different in Oslo. Nevertheless, the findings in this study indicate that wearing Lycra and riding bikes with a double digit number of gears is not only a comfort management strategy resulting from a hilly topography. If cultural expectations of clothing for bicycle commuting involve wearing specialised clothes and footwear, bicycle commuting is likely to be perceived as less convenient than if it the cultural norm was to bicycle commute in your normal work outfit. It might also be perceived to be more physically demanding than it really is, because of the associations between sportswear and physical exertion.

Another sign of the strong link between cycling, fitness and exercise, and the missing links between cycling, transport and utility, is the view that several of the informants had on electric bicycles. By reducing the physical demands of cycling, electric bicycles have the potential to expand the boundaries for recruitment to the practice. A case-control study performed in Oslo indicates that e-bikes makes people cycle more frequently and on longer distances (Fyhri and Sundfør 2014). The informant Henrik was worried that bicycle commuting would make him sweat. When asked whether having an electric bicycle would make bicycle commuting more attractive, he replied:

*No... (...) that's for lazy people. Electric bike... then it's not a bike anymore. (...) A bike is a thing you pedal, not just sit there and receive help.*

Regarding electric bicycles as cheating is a common attitude among Norwegians (Skreiberg 2014). One if the other informants, Martin, had talked

to his wife about buying an e-bike, but found the associations to old age and laziness somewhat discouraging:

*You portray yourself as a bit lazy when you use an electric bicycle. The ones I see with e-bikes are old people in their fifties just sitting there, tilting the pedals back and forward. (...) It would be a defeat, because the bicycle as a mode of transport is so incredibly efficient and demands so little effort to move as fast as you do. (...) [It would be] like cheating. But I've suggested it to my wife, who's a bit afraid of arriving sweaty at work.*

Martin's statement shows that cultural meanings connected to a practice can make it less relevant for certain groups of the population, and can therefore be a constraint to bicycle commuting. In this case, the strong association with exercise is likely to make people regard bicycle commuting with an electric bicycle as 'cheating' or the result of laziness, even though it demands much more physical effort than driving a car or taking the bus. The difference is that driving a car or using public transport is not associated with exercise, which is why it is not regarded as cheating either.

So far, the chapter on cultural meanings has focused on how the cultural meanings of bicycle commuting are shaped by the infrastructure, contextual elements, cultural context, the cohort of carriers and connected practices. The following section focuses on the influence of social networks and penetration rate in the population for the recruitment of carriers and the cultural meanings associated with the practice.

### *Low penetration rate*

When participating in a practice is not seen as obligatory in a society, more than just being exposed to it is necessary to capture faithful carriers (Shove, Pantzar, and Watson 2012, 69). New practices exploit the social connections made and maintained by other practices, which is what happens when a practice spreads through social networks. In other words, when new carriers are recruited to a practice by their neighbours, friends or colleagues (Shove, Pantzar, and Watson 2012, 68, 73). The chances of encountering a practice and being recruited through social networks depends on the penetration rate of the practice in question, and is structured by social divisions, such as gender and class (Shove, Pantzar, and Watson 2012, 156).

*Where practices are widespread within any one group or society, the chances of encounter are that much higher. And in situations where participation is simply expected, recruitment follows as a matter of course (Shove, Pantzar, and Watson 2012, 68-69).*

In October/November 2013, the bicycle modal share for commuting in Oslo was 12 percent (Kummel and Nordström 2013b). Most of my informants did not know many others in their social network who bicycle commuted regularly, and several of the informants had experienced social challenges as a consequence of bicycle commuting. One of them was Mari, who recently spent a year in Copenhagen, where she discovered the social advantages of participating in a practice with a high penetration rate in the population: “In Copenhagen everyone rode a bicycle, and you were a part of the group. But here you’re always... [the only one]”. Even though Mari didn’t regard being the only one who cycled among her friends to be a major problem, her comment is a good example of the social constraints to the performance of more or less marginalised practices in a society. Angelica was the only

informant with an electric bicycle, a type of bicycle that just recently was introduced in a large scale on the Norwegian market. Her story illustrates the powerful mechanism of social connections for the spread of new elements and practices:

*Everyone wants to know how the bicycle works (...) I get stopped everywhere when I'm on the bicycle. (...) So now I carry with me information cards, because I've understood that I need to have information about e-bikes to hand out to people. (...) That's how I ended up buying mine: I met someone on an electric bike and started asking him about it.*

According to Angelica, several of her colleagues had acquired an electric bicycle after she had introduced it to them. The French informant Giselle also put this mechanism into words with the story of how she was influenced by her Norwegian husband to start cycling:

*I arrived on a Saturday, and then we [my husband and I] went straight to the bike shop (...). And on Sunday we went cycling in Nordmarka<sup>19</sup>. 'Okay, that's the way it works in Norway', I thought. It was new to me, since I wasn't accustomed to cycling.*

Whether Giselle would have commuted by bicycle today had her husband not introduced her to cycling is hard to say, but her story points to the importance of social mechanisms. The relatively low penetration rate in the population in Oslo, especially in certain parts of the city and in the winter season, poses a challenge for the recruitment of new practitioners, because it impedes the spread through social networks. It is also a challenge for the persistence of the practice, since the risk of experiencing socially awkward situations is higher than in places where cycling is widespread in the population.

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<sup>19</sup> A part of Oslomarka.

Throughout this subchapter, evidence of the formation and influence of the cultural meanings connected to bicycle commuting have been presented. These connections of meanings have been made through performances and knowledge of the practice, and have implications for the recruitment of carriers and future performances, which again influence the meanings of the practice. Today, bicycle commuting in Oslo is linked to meanings of exercise, sports and lifestyle, rather than to meanings of convenience and normality. Although bicycle commuting is strongly associated with health benefits, it is also linked to danger and harm, which has a discouraging effect on the recruitment of carriers. The disconnection to convenience and normality also work as constraints for the recruitment of carriers. The cultural norms for performing sports and exercise involve wearing specialised clothing and footwear. When bicycle commuting is associated with exercise, the cultural norms follow, and the practice is likely to be perceived as less convenient and more physically demanding than if it the cultural norm was to commute in a normal work outfit. It also makes people regard bicycle commuting with an electric bicycle as ‘cheating’ or the result of laziness. The relatively low penetration rate in the population in Oslo constrains the recruitment of new practitioners, because it impedes the spread through social networks. It is also a challenge for the persistence of the practice, since the risk of experiencing socially awkward situations is higher than in places where cycling is widespread among the population. Another consequence of the low penetration rate is that most people’s expectations of comfort and convenience are being shaped by other commuting practices than cycling.

The final part of the analysis is based on the findings from this and the previous chapter. To remind the readers of what the main findings in these chapters were, I first provide a short summary. Readers with a sharp memory can turn to page 105 to read the final analysis chapter.

In *Why people commute the way they do* I argue that people commute in ways they find to be time-efficient, convenient, comfortable and safe. Some people also value physical activity and the promotion of good health. These issues depends largely on the informants' life situations, their preferences, competence and knowledge shaped by past experiences and routines, the material infrastructure and objects that surround them, contextual elements, such as distance, topography and weather, and also cultural meanings connected to different commuting practices. In *Constraints to bicycle commuting* I described the main barriers to bicycle commuting in Oslo. Poor infrastructure is identified as the most critical constraint because of the negative effects it has on safety, comfort, convenience and time-use. Along with complex traffic regulations for cyclists it makes bicycle commuting a rather skill-demanding practice, which is an additional constraint. Fragmented and inconsistent bikeways have caused a strong association to be made between bicycle commuting and danger, a structural story that is amplified through the media, and poses a massive constraint to recruiting new carriers. The cultural links between bicycle commuting and exercise, largely caused by the general, cultural associations between cycling practices and sports/fitness, and to an extent also the topography in Oslo, is both a constraint to and an enabler of bicycle commuting. While enabling the recruitment of people interested in combining commuting with physical exercise, the links constrain the recruitment of people that are not interested in wearing sportswear and breaking a sweat on the way to work. I further argue that bicycle commuting is missing a cultural link to normality, which originates from a low penetration rate in the population along with associations to exercise and danger. This missing link makes most people regard bicycle commuting not as an outcome of rational decision-making based on time-use, convenience, comfort and safety, but rather as the outcome of individual characteristics of the carriers, such as lifestyle, interests or values. The low penetration rate in the population

is also a constraint in that it keeps the practice from spreading through social networks, and also because most people's expectations of comfort and convenience are being shaped by other practices than bicycle commuting. Other constraints to bicycle commuting identified in this study are bicycle thefts, which works as both a reactive and a preventive constraint for bicycle ownership and use, the lack of safe parking and shower facilities at work (and at home), economic entanglements with other transport modes and geographical elements and their influence on comfort and convenience in relation to bicycle commuting.

The next and final analysis chapter discusses the implications the findings in this study have on policy recommendations to promote bicycle commuting in Oslo.



## Promoting bicycle commuting through policymaking

In this chapter, I aim at providing answers to the second part of the research question “What are the main constraints to bicycle commuting in Oslo, and how can policies promote the practice?” by describing some of the implications the findings in this study have on policymaking. A whole separate thesis could easily be made on the topic of policymaking and cycling, and this chapter is far from a comprehensive assessment of the issue. Nevertheless, when the point of studying the agentive forces behind people’s commuting routines and the constraints to bicycle commuting practices in Oslo is to get more people to commute by bicycle, as is the case for this thesis, some recommendations for the promotion of bicycle commuting through policy are in order.

A common approach in both theorising and policymaking is to regard personal values and attitudes as significant forces that drive behaviours based on individual choice (Shove 2010). Elizabeth Shove (2010) refers to this approach as the ABC model – Attitudes, Behaviour and Choice. A major deficiency of the ABC model is its inability to explain why people do not always act in accordance with their values, the so-called value-action gap (Blake 1999, cited in Shove 2010, 1276). Another deficiency is the neglect of material artefacts and contextual issues, and the capacity these elements have to influence human action. Although it is difficult to locate causality between interventions made and increased levels of cycling, the limited success of policy interventions based on the ABC framing demonstrates a need for new thinking on mobility (Ogilvie et al. 2014; Yang et al. 2010; Pucher et al. 2010, cited in Aldred and Jungnickel 2014, Guell et al. 2012, Watson 2012). An international review of infrastructure, programs and policies to promote cycling concludes that public policy has a crucial role in increasing levels of cycling, and recommends “an integrated package of many different,

complementary interventions, including infrastructure provision and pro-bicycle programs, supportive land use planning, and restrictions on car use” (Pucher, Dill, and Handy 2010, S106). By making practices, and not people, the starting point for policymaking, the whole range of elements of a practice are included, in addition to the connected, competing and intersecting practices. Policymakers, and other actors for that matter, have significant powers to change social practices by influencing

*a) the range of elements in circulation; b) the ways in which practices relate to each other; c) the careers and trajectories of practices and those who carry them; and d) the circuits of reproduction (Shove, Pantzar, and Watson 2012, 146).*

Policies aim at influencing rather uncontrollable social processes, and although interventions have an effect, the effects are not always what the policymakers intended them to be. According to Shove, Pantzar, and Watson (2012, 145) policymaking is not about “pursuing pre-defined outcomes by means of manipulating driving or obstructing factors”, rather it is a process involving ‘trial-and-error’ learning and constantly adjusting to changing conditions.

In cities with high levels of cycling, the inhabitants are in a sense recruited to cycling by the design of the city and the products on sale, as well as by the expectations of friends and family. This leads to “changing populations of more or less faithful carriers”, on which a practice depends for survival (Shove, Pantzar, and Watson 2012, 69). Today, bicycle commuting in Oslo is regarded as unsafe, skill-demanding and largely for the purpose of exercise. For bicycle commuting to attract more carriers, it needs to be considered as fast, safe, convenient, comfortable and *normal*. As already demonstrated, the cultural meanings associated with a practice depend on how the practice is positioned within a range of interconnected material and social arrangements.

Policymakers in Oslo first of all need to alter the material position of cycling, and, more specifically for this case, bicycle commuting. Bikeway infrastructure affects the level of competence needed for performance, its cohort of carriers, and finally the meanings associated with the practice. As a safe and consistent network of bikeways is laid out, along with a more comprehensible set of traffic regulations for cycling, the levels of skills, competence and materials needed for bicycle commuting will be lowered. As traffic safety increases, the meanings connected to cycling and bicycle commuting will change, influencing the cohorts of carriers, which in itself will alter other cultural meanings connected to bicycle commuting, such as exercise and sports. And, as Watson (2012) points out, when a city's strategy for efficient personal transport is shaped around the bicycle and cycling is utterly normal and mundane, there is little or no need for bicycle campaigns and promotions.

In many countries, policymakers are increasingly accepting that minimum-solutions for bikeway infrastructure, such as narrow bike lanes made up of dotted, white markings, fragmentary sections of off-road cycle routes, and attitude campaigns to promote cycling are not resulting in any step change in cycling levels (Watson 2012). In Groningen in the Netherlands, where 40 percent of local trips are made by bicycle, a long-term political commitment to cycling through fundamental, systemic priorities and car-use restrictions have resulted in high cycling levels. It is common knowledge that the political commitment in Oslo to cycling has been sparse. Even though the first plan for a cohesive grid of bicycle infrastructure was sanctioned already in 1977, the main bikeway grid of 180 kilometres is still far from complete (Løken 2014a). Some of today's planned projects to build bikeway infrastructure have, according to the municipality's own website, been waiting for political sanctioning for up to ten years (Oslo kommune 2014).

Comparing the success of some cities and the failure of others, it is important to recognise that the political commitment to cycling has partially been made possible by pre-existing properties of the city's transport system and culture, and that the historical trajectory of cycling and bicycle commuting in a society matter to which strategies are needed to promote the practices. While cycling declined in cities such as Groningen and Copenhagen when the car entered the scene, it never disappeared or became unusual, which is why interventions to reverse the decline of cycling were both politically and practically feasible. In the words of Shove, Pantzar, and Watson (2012, 154): “(...) the *persistence of relevant elements*, including meanings, competences and bicycle-related infrastructures, seems to have made it easier to reinstate cycling to at least some degree”. Gössling (2013) suggests that the existing bikeway infrastructure, along with cultural expectations, made it possible to create a common vision of Copenhagen as a bicycle city, and to prioritise the bicycle as a transport mode at the same level, or higher, than other modes of transport. The changes affected by the initial interventions in these cities provided the ground for further interventions (Watson 2012). In places where cycling was less propagated to begin with, and disappeared more or less completely when other modes of transport entered the scene, as it did in Oslo, interventions to promote cycling are likely to be less feasible. A ‘copy-paste’ strategy based on present policies in successful cycling cities is therefore not necessarily the right approach for promoting bicycle commuting and utility cycling in Oslo.

As an exclusive practice, bicycle commuting competes with other commuting practices for carriers and resources, such as city space, money, discourses and symbols (e.g. of safety, health, convenience, comfort and status). Bicycle commuting is also entangled with many other practices, such as shopping, exercising, family-related obligations and activities, etc. Its relative position to the intersecting, competing, and connected practices is essential, which is why policymakers should pay closer attention to these complex systems of

practices. If the aim is to reduce the negative effects of personal transportation on the local and global environments, the most important policy intervention is to increase the competitiveness of environmentally friendly practices in regards to time-efficiency, convenience and comfort on the expense of fossil fuel demanding practices, or, in social practice theoretical terms; to strengthen the links between elements of desirable practices, and break the links between elements of undesirable practices (Shove, Pantzar, and Watson 2012).

Considering the numerous benefits to cycling, and the competitiveness with other transport modes in regards to time-use and reach compared to walking, the bicycle should be prioritised higher than public transport, and in some places even higher than pedestrians.

The 30-day-ticket for public transport is an example of a competitive constraint to bicycle commuting in Oslo. The ticket adds to the convenience of using public transport by removing the barrier of having to buy a ticket before each trip. As a financial investment it pays off to use it frequently, since the cost per trip equals the investment divided on the number of trips. The fact that the ticket enables public transport commuting is a politically desired development, because it constrains car driving. An undesirable outcome is the constraint it poses for cycling and bicycle commuting. Even though the level of bicycle commuting and cycling in general might increase if the ticket was removed, a probable consequence would have been increasing levels of car driving. Instead of competing for carriers, cycling and public transport must find better ways of collaborating, in order to reduce the overall level of car driving. The public transport company Ruter's pilot project on the metro system, where bicycles can be transported for free outside rush hours, is one example of collaboration between the two transport modes (Ruter 2014). Policymakers should facilitate further the combining possibilities of public transport and cycling in order to outcompete car driving, such as safe-parking facilities in the immediate vicinity to major public transportation hubs. Bicycle

thefts are regarded to be a massive constraint to cycling and bicycle commuting in Oslo. It is both resource-demanding and difficult, if not impossible, to eradicate. While acknowledging that bicycle thefts are a real problem that can and should be alleviated by preventative measures, such as building safe parking infrastructure and promoting secure bicycle locks, it is important to remember that this constraint is likely to be reduced by enhancing the competitive position of cycling in a society. With enough enablers of cycling practices in place, a bicycle theft will, as in Copenhagen, not prevent people from cycling.

The importance of an adequate infrastructure for bicycle commuting should not lead to the exclusion of other, softer policy measures aiming directly at changing the cultural meanings connected to bicycle commuting and cycling. Timing is highly relevant to such measures: If an intervention is made at a time when other transitions in society pull in the same direction, the effect of the intervention can tap into these social processes, thereby amplifying the effect (Shove, Pantzar, and Watson 2012, 155). The fact that cycling has become fashionable among parts of the hipster sub-culture in Oslo may be one explanation for the relatively high bicycle modal share in these city districts, and is a type of trend that policy interventions can exploit in order to promote bicycle commuting. Staying fit and healthy is another societal trend with a potential to increase levels of cycling. This type of diversification of cycling practices represents a more diffuse effect of growing rates of cycling, but, as Watson (2012) points out: “Through the proliferation of manifestations of the practice of cycling, the possible points of contact through which new practitioners can be recruited are increased”. In addition to playing a role as fashion or symbols for sub-cultures of cycling practices, material objects can add to the comfort, convenience and safety of cycling, and thereby remove some of the constraints to bicycle commuting. Oslo has a cold climate parts of the year, and some areas of the city has a relatively challenging topography

compared to cities with very high levels of cycling. These contextual issues are constraints to bicycle commuting, but can be alleviated with the assistance of material artefacts, such as clothing, lights, studded tyres, gear systems, and shower facilities. By reducing physical effort, electronic bicycles have a vast potential to expand the boundaries for recruitment to bicycle commuting, and alter the cultural meanings connected to the practice. E-bike sales have started to grow, but the technology is still partly associated with old age, physical disabilities and laziness. These meanings constrain the spread and use of e-bikes. Policy interventions should be made to further facilitate the propagation of diversified bicycle technologies and accessories that can help reshape cycling practices and the meanings connected to them, and thereby increase rates of cycling and bicycle commuting. The city bike scheme in Oslo is a good example of an intervention that removes material barriers to cycling, including the constraints posed by bicycle thefts. It also assists in the process of normalising cycling by being a visual element in the city and enabling short bicycle trips without any special gear or clothes.

However, some of the material artefacts that have the potential to alleviate constraints to bicycle commuting are regarded as expensive, time-consuming or inconvenient to use, such as helmets or studded tyres, and does therefore not necessarily add to the comfort and convenience of cycling. It is therefore important that policymaking aim at making cycling as low-tech as possible, through measures such as safe and functional bikeways, high, year-round road maintenance, street lighting etc. Making the physical environment bicycle commuting is performed in as uniform as possible, will also enable the practice to become more habituated in the carriers. This point leads the argument onto to the agentive forces that exist in habits and routines, forces that need to be taken into account by policymakers in the promotion of bicycle commuting. Routines cement themselves in the carriers by shaping our dispositions, knowledge and preferences, including expectations of comfort

and convenience. This process starts from the moment we are born, which is why bicycle-promoting policies (e.g. bicycle training programmes) should be directed specifically at children and their parents through children's institutions, such as kindergartens and schools. Another implication of habit for promotion of bicycle commuting is the importance of timing. By intervening at the moment of big or small life events, critical stages where routines are renegotiated, policies are likely to be more effective than trying to change already cemented routines. Policy programmes directed at new citizens, e.g. students, use timing consciously to enhance the effects of interventions. Policies could also aim at staging 'everyday crises of routines', situations where people are confronted with their own knowledge inadequacy of a practice or discover that they have been misguided by personal or societal structural stories about commuting practices or transport modes. The old saying 'learning by doing' is far from outdated, and should in this case be supplemented by 'discovering by doing'. A major problem in Oslo today is that people are kept from making such discoveries by the poor infrastructure, bringing the argument back to the importance of an adequate bikeway system.

Indirectly, policy interventions can set off other and more unpredictable feedback processes which can affect cycling rates. A positive feedback is what happens when the effect of a certain measure is self-strengthening. An example is the link between safety and the number of people cycling, where several research projects have concluded that, in general, cycling becomes safer the more people who do it and that this mechanism is more effective than end-of-pipe solutions to bicycle safety (Watson, 2012, p. 495). Another example of a positive feedback mechanism is called 'critical mass'. The term is adopted from nuclear physics, where it refers to the mass needed to spark off a chain reaction. In social terms, critical mass is the sufficient number of adopters of an innovation in a social system for the rate of adoption to become self-sustaining and create further growth (Rogers, 2003). The most



fundamental feedback effect is normalisation; the more people who cycle, the more normal the practice becomes, and this normalisation process facilitates further recruitment. A part of this process involves a collective change in expectations of comfort and convenience:

*As a practice like cycling is propagated, meanings and discourses around the practice would inevitably change too, as cycling becomes increasingly mundane and unremarkable. Norms and expectations around physical exertion and exposure to weather might also gradually shift. If these shifts worked together in concert as part of a pattern of increasing recruitment to cycling, then a transition can start to build (Watson 2012, 495).*

In this chapter I have, on the basis of the findings in this study, presented a handful of policy implications for the promotion of bicycle commuting and utility cycling in general in Oslo. Since the success and failure of policy interventions depends largely on external structures, outcomes of interventions can never be predicted. By timing interventions in accordance with societal transitions that pull in the same direction, or with individual renegotiations of routines, the chances of success increases. My main argument in this chapter is that policies should be aimed at breaking the associations between cycling and danger, and connecting the practice with meanings of safety, convenience, comfort, and finally normality. At this point, interventions should primarily be directed at improving the material position of bicycle commuting, and its position in relation to the complex system of competing, intersecting and connected practices.

## Conclusion

In the Master's thesis "Bicycle Commuting in Oslo – Practices, Constraints and new Directions for Policy" I identify the main constraints to bicycle commuting in Oslo and make recommendations for the promotion of bicycle commuting through policymaking. The main research question for the study was "What are the main constraints to bicycle commuting in Oslo, and how can policies promote the practice? ". The research was also guided by the questions "Why do people commute the way they do" and "In what ways does the historical trajectory of commuting practices in Oslo shape bicycle commuting today?". Throughout the research process, qualitative methods were used to collect relevant empirical data, the main share by in-depth interviews with 20 people in Oslo about their commuting routines. The data was analysed in the perspective of social practice theory, and presented in the chapters *Why people commute the way they do*, *Constraints to bicycle commuting in Oslo*, and *Promoting bicycle commuting through policymaking*.

The study identifies the management of everyday life, including time-space coordination, and aspects of convenience, comfort, safety and health as main features of the informants' commuting routines. These routines were outcomes of an ongoing process of negotiation with external structures of society, including transport systems, geographical and contextual features, material objects and infrastructure, cultural meanings and social expectations, in addition to embodied predispositions, including notions of comfort and convenience, competence and knowledge.

Throughout the study, I argue that bicycle commuting in Oslo is today largely associated with meanings of danger, sports and fitness. Inconsistent and deficient bikeway infrastructure has contributed to the creation of a structural story of cycling in Oslo as unsafe. The infrastructure, along with complex

traffic regulations for cyclists, make bicycle commuting a rather skill-demanding practice. The skewed cohort of carriers and the ways bicycle commuting in Oslo is practiced, along with relatively demanding topography, links bicycle commuting to meanings of exercise and sports. The practice is therefore regarded to be an outcome of characteristics of the practitioners, such as personal interests, moral values and lifestyle decisions, more than it is regarded to be a normal practice and an outcome of rational decision-making on the basis of time-efficiency, convenience, comfort and safety.

The study identifies the bikeway infrastructure and the cultural significance of bicycle commuting as the biggest barriers for the recruitment and sustainment of practitioners. The fact that cycling in Oslo is regarded as dangerous is the single most prominent constraint. The cultural links to sports and exercise enables the recruitment of some carriers, but is a relatively large constraint for the recruitment of those who commute for the purpose of transportation and not exercise. The cultural meanings of bicycle commuting need to be disconnected from danger, sports/exercise and characteristics of the carriers, and linked with convenience, comfort, safety, and finally *normality*.

Policymakers can intervene in practices by influencing the range of elements in circulation, the ways in which practices relate to each other, the careers and paths of practices and those who carry them, and the ways bicycle commuting is reproduced. The historical trajectories of commuting and cycling practices in a society, including the pre-existing infrastructure, materials, cultural expectations, competence and knowledge, influence the current position of bicycle commuting and have implications for bicycle promoting policies. In cities such as Oslo, where utility cycling disappeared more or less completely when other modes of transport entered the scene in the second half of the 20<sup>th</sup> century, interventions to promote utility cycling are likely to be less feasible than in cities where cycling never disappeared or became unusual. To simply

reproduce present policies in successful cycling cities might therefore not necessarily be the right way of promoting bicycle commuting and utility cycling in Oslo.

Policies to promote bicycle commuting in Oslo need to be adapted to the current status and position of the practice. Considering the present conditions for cycling in Oslo, policies should at this stage primarily be directed at improving the material position of the practice, and its position in relation to the complex system of competing, intersecting and connected practices. Hard policy measures, such as building infrastructure and altering the material arrangements of the practice, should be supplemented by softer measures to change the meanings of the practice and break people's old commuting routines. Together, these measures can form integrated packages of complementary policies, whose combined effects have the potential to alter the position of bicycle commuting in Oslo and increase the recruitment of carriers to the practice.

## Scope and limitations

This research project is not exhaustive on the subject of bicycle commuting practices in Oslo, and some areas are covered with a lighter pen stroke than others. The scope of a Master's thesis limits the time and resources available, and there are also restrictions to the length of the report. These limitations have demanded heavy prioritising on my part.

One of the most obvious shortcomings is the exclusion of the political and bureaucratic processes behind the establishment of bikeways and other types of transport infrastructure in Oslo. It is widely accepted that the building pace of bicycle infrastructure in Oslo has been slow, and that the maintenance of the existing infrastructure is relatively poor, especially during winter. In a study with the aim of identifying the constraints to bicycle commuting in Oslo, it would be highly relevant to study political discourses and priorities, the bureaucratic processes and structures, power relations and so forth in relation to the topic. Furthermore, technological innovations and developments deserve closer attention than this study has been able to provide. Other limitations are the lack of a systematic examination of other commuting practices for which bicycle commuting competes for carriers, and of the connected and intersecting practices, such as shopping, sports and leisure. A thorough investigation of the enablers of bicycle commuting and other cycling practices in Oslo would have provided useful insights for future policymaking, but have been left out in order to limit the scope of the thesis.

Social practice theory takes a holistic approach for understanding society, but a research project can never be all-inclusive. Based on my personal research interests, the aim of this study has been to identify various constraints to bicycle commuting through the perspectives of commuters, and also to give some principal recommendations for policymaking to promote the practice.

For readers with an interest in the political and bureaucratic processes behind the planning and building of bicycle infrastructure in the municipality of Oslo, I recommend Lode and Eliassen (2011b), Kummel and Nordström (2014a) and Berg (2010). For those especially interested in the city bike scheme “Oslo bysykkel”, see Langfeldt (2011) and Alsvik (2009).

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## Appendices

### Appendix A: Informants

#### *Information about the informants*

All names are fictional.

#### **Interview 1: Martin (35)**

Martin is married and has one child. The family lives in an apartment in the city district Gamle Oslo, and he commutes five days a week to downtown Oslo, approximately 4.5 kilometres one way. Martin owns a car, a scooter and a bicycle, and uses all three modes of transport to commute to work.

#### **Interview 2: Pål (60)**

Pål lives in an apartment by himself in the city district Vestre Aker. He works at Ullevål and commutes by bicycle all year, a distance of approximately 6 kilometres. Pål does not have a car, but is a member of a car sharing scheme.

#### **Interview 3: Marianne (29)**

Marianne is a student with a part time job who lives by herself in Bærum. She commutes to both Blindern (7 kilometres) and the university college in Pilestredet (9 kilometres). She commutes by bicycle during summer when it's not raining. Otherwise she commutes by metro. Marianne does not own a car.

#### **Interview 4: Camilla (22)**

Camilla is a student living in student home in the city district St. Hanshaugen. She commutes 2 kilometres to school by feet or by bicycle. Camilla uses the bicycle sharing scheme "Oslo Bysykkel".

**Interview 5: Karsten (43)**

Karsten lives in the city district Grünerløkka with his wife and three children. He works at Skøyen, about 7 kilometres away from home. Karsten has several bicycles, and bicycle commutes all year with action cameras. He is a member of the cycling union SLF, and participates actively in cycling debates in social media. The family does not own a car.

**Interview 6: Abdul (39)**

Abdul lives in the city district Søndre Nordstrand with his wife and two five-year-old children. He works downtown and commutes by bus and metro, a distance of about 13 kilometres. The family owns one car, which his wife uses to commute to work. Abdul owns a bicycle.

**Interview 7: Mari (23)**

Mari is a student at the University of Oslo and lives with her parents in the city district Ullern. She commutes by bicycle all year, a 10 kilometre distance one way. She owns three bicycles, and does not have a driver's licence or a car. She has a family membership in the cycling union SLF.

**Interview 8: Olav (64)**

Olav lives in the city district Søndre Nordstrand with his wife. He has commuted by bus all his working life, a distance of 14 kilometres. Olav does not own a bicycle. His wife uses their car to commute to work.

**Interview 9: Anna (27)**

Anna lives in the city district Gamle Oslo with her husband, and works downtown. They do not own a car, and she does not have a bicycle. She commutes to work downtown by metro or bus, a distance of about 3 kilometres. Sometimes she walks home.

**Interview 10: Baard (42)**

Baard lives in the city district Grorud with his wife and three children. He works at Helsefyr, a commuting distance of around 8 kilometres, and commutes by bicycle all year. Baard is a member of a sport's club for cycling, and has participated in several races. The family owns a car, which his wife uses to commute to work. Baard has four bicycles.

**Interview 11: Vilde (38)**

Vilde lives in the city district Frogner with her husband and three children. She works in the city centre, a 2.5 kilometre commute one way. The family does not have a car. Vilde owns a bicycle. She commutes by metro. Vilde used to commute by bicycle during the summer.

**Interview 12: Henrik (48)**

Henrik lives by himself in the city district Grünerløkka, and commutes by motorcycle in summer and car in winter. His commute is about 3 kilometres one way. Henrik owns a car and a motorcycle, and no bicycle.

**Interview 13: Giselle (40)**

Giselle lives in the city district St. Hanshaugen with her husband and two children. She commutes by bicycle all year to Frogner, a distance of about 2 kilometres. The family owns a car, and she has one bicycle.

**Interview 14: Guro (59)**

Guro lives in the city district Frogner with her husband and works in the city centre, a distance of approximately 1.5 kilometres. She usually commutes by walking. The household owns a car, and Guro has a bicycle stored away.

**Interview 15: Robert (28)**

Robert lives by himself in the city district Sagene and works at Blindern, a commute distance of about 3 kilometres. He commutes by bicycle in the summer season and by bus and metro during the winter. Sometimes Robert walks. He owns a bicycle, but does not have a car or a driver's licence. Robert is a member of the cycling union SLF.

**Interview 16: Angelica (50)**

Angelica lives by herself in the city district Sagene. She works in Bærum and various places in the city. Several days a week she commutes by e-bike to Bærum, a distance of around 16 kilometres. When she has a lot to bring, she sometimes commutes by car. Angelica owns five bicycles, including an electric one, and a car.

**Interview 17: Eivind (55)**

Eivind lives in the city district Nordstrand with his partner, and commutes 14.5 kilometres to Vækerø by bicycle all year. He owns a car and three bicycles.

**Interview 18: Geir (38)**

Geir lives in the city district Ullern with his wife and three children, and works at Helsefy. He commutes by bicycle all year, a distance of about 10 kilometres. Sometimes he drives to work by car. Geir owns three bicycles, and the family has a car. He is a member of the cycling union SLF and the bicycle organisation Norsk organisasjon for terrengsykkel.

**Interview 19: Lillian (32)**

Lillian lives in the city district Grünerløkka with her partner, and commutes 7 kilometres to Skøyen. During the summer season, when it's not raining, she

commutes by bicycle. In the winter she combines metro with train. The household owns a car, and until recently she had a bicycle (it got stolen).

#### **Interview 20: Kristine (50)**

Kristine lives in the city district Vestre Aker with her teenage son, and works at Bryn. She commutes by car all year, a distance of 13.5 kilometres. She owns a car and a bicycle.

#### ***Summary of informant information***

- Eleven informants commuted to the same destination using the same mode of transport every weekday all year.
- Six informants commuted to the same destination every weekday using different modes of transport. Some of them combined different modes of transport during a single commute, while others varied the mode of transport with the seasons or the weather.
- Three of the informants either worked or studied in more than one place, and therefore had more than one commuting destination. None of them relied on one single mode of transport.
- 14 of the 20 informants practiced bicycle commuting occasionally or regularly.
- Five of the nine informants who used different modes of transport commuted by bicycle occasionally or seasonally, which means that 12 out of the 20 informants practiced bicycle commuting.
- Only two of the eight informants that were not practicing bicycle commuting at the time had never tried commuting to work by bicycle.
- Four informants car commuted, but only one of them did so every weekday during the whole year.
- Eight informants commute by public transport, either by bus, tram or metro, and half of them always commute by public transport.

- One informant always commuted by walking, and two informants walked occasionally.

The informants had access to various modes of transport for their commute:

- All 20 informants had access to one or more modes of public transport.
- 12 informants owned a car, out of which nine shared it with a partner. None of the informants' households had more than one car.
- One of the informants owned a scooter in addition to the car he shared with his wife. Another informant had both a car and a motorcycle to himself.
- Out of the seven informants bicycle commuting all year, five had a car in the household.
- 14 informants owned a bicycle, half of which owned two or more.

Ten informants were personally engaged in cycling initiatives: Five had memberships in the cycling union SLF, two were members of a cycling club, while three had participated in the demonstration initiative Critical Mass.

## Appendix B: Interview guides

### *Informants who commute by bicycle*

#### **Background information**

- Name and birth date
- Home and work addresses
- Home and work history
- Profession
- Type of residence
- Family situation
- Education



- Income level

### **Commuting practices**

- Commuting routines
- Time-use
- Day-to-day changes
- Seasonal changes
- Important aspects for choice of transport mode
- Transport mode options
- Car access
- Bicycle access
- Commuting history
- The influence of family situation
- Future commuting routines

### **Bicycle use and conditions for cycling in Oslo**

- Personal associations to cycling in Oslo
- Reasons for commuting by bicycle
- Reasons for starting to commute by bicycle
- Advantages and disadvantages of cycling
- Use of clothes, safety gear and accessories
- Facilities at work and at home
- Personal experience of cycling in Oslo
- Views on the bicycle infrastructure
- Significance of climate, weather, distance, topography
- Interaction between traffic groups
- The traffic regulations
- Commuting route
- Other challenges of bicycle ownership and use

- Bicycle theft
- Practicing bicycle commuting (behaviour in traffic)
- Behaviour of other cyclists
- Examples of annoying and rewarding experiences when cycling
- Safety
- Personal relationship to cycling and bicycle use
- Past travel and commuting routines
- Mobility needs unsuitable for cycling
- Future commuting routines
- Measures to make bicycle commuting more attractive

### **Oslo – potential and status quo**

- Oslo as a future bicycle city
- Media focus
- Cultural changes
- Today's cyclists
- Identity
- Social connections
- General attitudes to cycling
- Policy measures to promote cycling

### **Other**

- Motivation for being an informant
- Relevant memberships
- Final comments and questions

## *Informants who commute by other modes of transport*

### **Background information**

- Name and birth date
- Home and work addresses
- Home and work history
- Profession
- Type of residence
- Family situation
- Education
- Income level

### **Commuting practices**

- Commuting routines
- Time-use
- Day-to-day changes
- Seasonal changes
- Important aspects for choice of transport mode
- Transport mode options
- Car access
- Bicycle access
- Commuting history
- The influence of family situation
- Future commuting routines

### **Bicycle use and conditions for cycling in Oslo**

- Personal associations to cycling in Oslo

- Reasons for not commuting by bicycle
- Advantages and disadvantages of cycling
- Use of clothes, safety gear and accessories
- Facilities at work and at home
- Personal experience of cycling in Oslo
- Views on the bicycle infrastructure
- Significance of climate, weather, distance, topography
- Interaction between traffic groups
- The traffic regulations
- Commuting route
- Other challenges of bicycle ownership and use
- Bicycle theft
- Practicing bicycle commuting (behaviour in traffic)
- Behaviour of other cyclists
- Examples of annoying and rewarding experiences when cycling
- Safety
- Personal relationship to cycling and bicycle use
- Past travel and commuting routines
- Mobility needs unsuitable for cycling
- Future commuting routines
- Measures to make bicycle commuting more attractive

### **Oslo – potential and status quo**

- Oslo as a future bicycle city
- Media focus
- Cultural changes
- Today's cyclists
- Identity
- Social connections

- General attitudes to cycling
- Policy measures to promote cycling

### **Other**

- Motivation for being an informant
- Final comments and questions

## **Appendix C: Paper of informed consent**

Samtykkeerklæring, Senter for Utvikling og Miljø (SUM), Universitetet i Oslo

Liv Jorun Andenes, livjan@student.hf.uio.no, +47 997 14 580

Dette er en samtykkeerklæring for frivillig deltakelse som informant i et masterprosjekt av Liv Jorun Andenes, tilknyttet mastergraden "Culture, Environment and Sustainability" ved Senter for Utvikling og Miljø (SUM), Universitetet i Oslo.

Informasjon om studien:

Masterprosjektet tar geografisk utgangspunkt i Oslo, og har som mål å undersøke hvilke tiltak som kan bidra til at flere bruker sykkelen som transportmiddel. En sentral del av prosjektet består av en rekke intervjuer med personer som jobber/studerer og/eller bor innenfor Ring 3 i Oslo kommune.

Vilkår for erklæringen:

- Informanten og forskeren er enige om tid og sted for gjennomføring av intervju.
- Intervjuet blir tatt opp på bånd for å sikre korrekt gjengivelse av sitater.
- Opplysningene fra intervjuet lagres med informantens fulle navn så lenge prosjektet pågår. Liv Jorun Andenes er den eneste som vil ha

direkte tilgang til denne informasjonen, som blir slettet når prosjektet avsluttes våren 2014.

- Veileder for prosjektet, Harold Langford Wilhite ved Senter for Utvikling og Miljø, kan ved forespørsel få innsyn i den innsamlede informasjonen.
- Informanten blir anonymisert i forskningsrapporten.
- Informanten kan når som helst trekke seg fra deltakelse i studien. Dersom dette skjer, vil den innsamlede informasjonen om informanten bli slettet.
- Liv Jorun Andenes opererer i henhold til forskerrollen, og har dermed taushetsplikt.
- Rapporten utgis internt på Universitetet i Oslos database «Digitale utgivelser ved UiO (DUO)» og eventuelt også eksternt. Rapporten vil være tilgjengelig for offentligheten.

Jeg samtykker med dette i

- min frivillige deltakelse som anonym informant i masterprosjektet til Liv Jorun Andenes, som er tilknyttet mastergraden ”Culture, Environment and Sustainability” ved Senter for Utvikling og Miljø (SUM) på Universitetet i Oslo.
- at jeg har fått tilfredsstillende skriftlig og muntlig informasjon om studien.
- at intervjuet blir tatt opp på bånd, og lagret med mitt fulle navn så lenge prosjektet pågår.
- at opplysningene fra intervjuet kan brukes i masterprosjektet.
- at Liv Jorun Andenes kan kontakte meg igjen dersom det er behov for oppklarende informasjon, eller ved forespørsel om et oppfølgingsintervju.

Ved å signere samtykkeerklæringen, bekrefter informanten at hun/han har lest og er innforstått med informasjonen i denne.

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Informantens underskrift

Dato

Ved å signere samtykkeerklæringen, bekrefter Liv Jorun Andenes, at hun vil følge de ovennevnte retningslinjene.

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Liv Jorun Andenes

Dato